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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Response to Second Request for Additional Information Regarding the South Texas Project's Graded Quality Assurance Program Questions

Reference:
1) Letter from L. E. Martin to the U. S. Nuclear Regulatory Commission dated January 21, 1997, "Submittal of The Revised Graded Quality Assurance Plan" (ST-HL-AE-5545)
2) Letter from Thomas W. Alexion to William T. Cottle dated April 14, 1997, 1996, "Review of Revised Operations Quality Assurance Program, South Texas Project, Units 1 and 2 (STP) (TAC Nos. M92450 and M92451)"

A revised version of Operations Quality Assurance Plan (OQAP), which incorporates the methodology for implementation of the Graded Quality Assurance Program, was provided to the Nuclear Regulatory Commission on January 21, 1997 (Reference 1). Based on the Nuclear Regulatory Commission's review of the January 21, 1997 version of the Graded Quality Assurance Program, several questions were raised and provided to the South Texas Project for response (Reference 2). Attached is the South Texas Project's preliminary response to these questions reflecting discussions between South Texas Project personnel and members of your staff which visited the site during the week of May 5, 1997.

We believe we have an understanding with your Staff that the approach outlined in the attached response will be acceptable to the Staff. We will finalize the Operations Quality Assurance Plan based on these responses and submit it with the final version of the our response to the "Request for Addition Information" by May 30, 1997.

We considered your staff's visit to the site during the week of May 5, 1997, to be very beneficial. We appreciated the opportunity to further answer questions regarding the methodology of the South Texas Project's Graded Quality Assurance process. We hope that your Staff's discussions with our personnel, provided your staff with a better picture of the South Texas Project's Graded Quality Assurance Program, Corrective Action Program and our associated feedback loops.

Q004

160061 Project Manager on Behalf of the Participants in the South Texas Project

If there any questions regarding the Graded Quality Assurance Program SSC Categorization/Probabilistic Safety Assessment responses, please call Mr. C. R. Grantom at (512) 972-7372. If there are any questions regarding the Graded Quality Assurance Program Operations Quality Assurance Plan responses, please contact Mr. R. J. Rehkugler at (512) 972-7922.

L. E. Martin
General Manager,
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JMP/

Attachments:
1) Response to NRC Questions on Graded Quality Assurance Program/Quality Assurance (Questions & Responses for 1-9)
2) Response to NRC Questions on Graded Quality Assurance Program/SSC Categorization (Questions & Responses for 10-14)
3) Preliminary Clarifications/Exceptions to USNRC R.G. and ANSI Standards Table

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Response to NRC Questions on Graded Quality Assurance Program/Quality Assurance
(Questions & Responses for 1-9)

Request for Additional Information #1

In Attachment 1, "Regulatory Guide Table", shown in Chapter 2.0, all the regulatory guides and endorsed ANSI standards to which the STP OQAP is committed are identified. All the exceptions taken by STP applicable to the FULL and BASIC programs are also indicated. Based on the staff's assignment of the criteria given in the introduction to Attachment 1, it was determined that each of the following regulatory guides and ANSI standards contain "shall's" that are changed to "should's" for SSCs in the BASIC program, and possibly also for SSCs in the FULL program, thereby resulting in an undefined QA program for those activities addressed:

- *R. G. 1.33; ANSI N18.7-1976/ANS-3.2 (BASIC only)*
- *R. G. 1.38; ANSI N45.2.2-1972 (BASIC and FULL)*
- *R. G. 1.39; ANSI N45.2.3-1973 (BASIC and FULL)*
- *R. G. 1.64; ANSI N45.2.11 (BASIC and FULL)*
- *R. G. 1.88; ANSI N45.2.9 (BASIC and FULL)*
- *R. G. 1.94; ANSI N45.2.5-1974 (BASIC and FULL)*
- *R.G. 1.116; ANSI N45.2.8-1975 (BASIC and FULL)*
- *R. G. 1.123; ANSI N45.2.13-1976 (BASIC and FULL)*
- *R. G. 1.144; ANSI N45.2.12-1977 (BASIC and FULL)*

It is requested that the licensee provide an identification of the intended assignment of the criteria in the OQAP (Attachment 1) for each of the regulatory guides and ANSI standards listed.

For SSCs in the BASIC program, it is expected that specific commitments to the QA controls will be included in the applicable procedures. For regulatory purposes, however, it is also necessary that such commitments to be included in the OQAP description as stipulated by 10 CFR 50.34(b)(6)(ii). Please provide a description of these commitments.

For SSCs in the FULL program in accordance with the definition provided in §3.1 of Chapter 2.0, it is expected that the QA controls would be in full compliance with the current commitments to meet the requirements of 10CFR50, Appendix B. The listing given above seems to make that expectation questionable. Please explain.

STP Response to Question #1

STP will amend the currently submitted draft table to OQAP Chapter 2.0. General clarification will preface specific listings and exceptions to USNRC Regulatory Guides (R.G.) and ANSI standards, and will state:

- "For R.G. addressed by the table, and unless specific clarification or exception is indicated, STP will implement the R.G. positions, including recommendations."

- "For ANSI standards addressed by this table, and unless specific clarification or exception is indicated, STP will treat ANSI requirements (i.e., "shall") as such -- except in instances where the standard itself provides options or requires a graded approach -- this notwithstanding the general applicability statements found in many standards (i.e., section 1.0).

The table itself will be amended to identify specific clarifications and exceptions to R.G. and ANSI standards. We believe based on discussions in the April 21, 1997 meeting between the NRC staff and STP that these changes, complemented by the OQAP text, provide a level of detail sufficient to satisfy 10CFR50.34(b)(6)(ii). These tables have been discussed in detail with the staff in the meetings at STP the week of May 5, 1997. These tables are provided for your information in Attachment 3. Finalized table information will be submitted with the impending OQAP resubmitted, that will also reflect discussions in the May meetings.

Request for Additional Information #2

In addition to the concerns identified in 1. above, it is noted that the Scope section of each chapter includes the following statement:

"The requirements of this chapter are applicable for structures, systems and components to an extent consistent with their importance to safety."

While this statement addresses the STP philosophical approach to graded QA, it results in a questionable and undefined program for BASIC SSCs with regard to the practicalities of implementation. In addition, it could mean that elements for SSCs in the FULL program may also be graded in an undefined manner. Please clarify.

STP Response to Question #2

OQAP Chapter 2.0 will be amended to provide more discussion of the Quality Assurance program as a whole, and will discuss the general approach to implementing the program "...to the extent consistent with importance to safety..." The similar scope statements particular to the other OQAP Chapters will be deleted.

Request for Additional Information #3

The qualifications of inspection, examination, and testing personnel will not meet the requirements of ANSI N45.2.6 for the BASIC program. Rather, personnel selected for these activities will be "experienced, task qualified journeymen or supervisors that did not perform or directly supervise the activity being inspected, examined, or tested." These personnel shall meet the "training and qualification requirements of the discipline training program." Please describe how the training these personnel receive under 10CFR 50.120 is augmented with regard to these added inspection responsibilities. Further, it is the staff's position that, for situations in which non-QA organization personnel perform inspections, the inspection procedure, personnel qualification criteria, and independence from undue cost and schedule pressures should be reviewed and found acceptable by the QA organization prior to the initiation of the activity. This commitment should be added to the OQAP.

STP Response to Question #3

Text will be added to indicate that the individuals performing peer inspections shall also receive training to the Quality organization's inspection procedure/process/methods in accordance with a Quality approved training program; and Quality will provide periodic oversight of the inspection activities.

Request for Additional Information #4

In Chapter 13.0, conditions adverse to quality for SSCs that are categorized as BASIC should be treated as follows:

- *an apparent cause determination should be conducted and failures trended to assist in evaluating the need for a more detailed root cause analysis, if excessive failures occur, and proper corrective action, and*

- *particular consideration should be given to assessing potential generic implications of certain deficiencies in SSCs in the BASIC program with regard to similar SSCs in the FULL program.*

STP Response to Question #4

STP has a corrective action program that is applied uniformly, with no distinction between items of high or low safety significance. This program includes provisions for both apparent and detailed root cause determinations, trending, and assessment of generic implications.

Request for Additional Information #5

In Chapter 7.0, reference is made to EPRI NP-5652 (NCIG-07) for the dedication of commercial grade items for service in safety-related applications. This document has been granted conditional endorsement by NRC in Generic Letter 89-02, dated March 29, 1989. Recognition should be given in the OQAP to the provisions of the generic letter to assure that supplementary NRC expectations are met. Please clarify the extent of applicability of the generic letter provisions to the FULL and BASIC programs.

STP Response to Question #5

This will occur. Additionally, paragraph 5.1.3.1 will be amended to delete the words "...or if identified as "basic"...(GQA) categorization."

Request for Additional Information #6

In Chapter 7.0, §5.4.2, a commitment is made to perform "periodic" evaluations of vendors on the Approved Vendors List. The prior commitment was to perform such evaluations 'at least once each 12 months" which is consistent with regulatory position C.3.b.(2)(third paragraph) in R.G. 1.144. The removal of the specific frequency is considered an unacceptable reduction in commitment for SSCs in the FULL program. An alternate acceptable position is to perform continuous, on-going evaluations of suppliers as information becomes available as described in an NRC letter to NEI dated October 24, 1996. The OQAP should be revised accordingly.

STP Response to Question #6

No change in practice was intended when these words were changed. Subsequent to development of the new Chapter 2.0 table and discussion with the staff as indicated in response to RAI item 1, the OQAP text will now be amended to reflect the STP positions relative to R.G. 1.144.

Request for Additional Information #7

In Chapter 10.0, § 5.1.1, peer inspections would be permitted without some of the supplementary controls previously specified. Deleted are:

- *the inspector could not report to the same supervisor as does the performer.*
- *if the inspector reports to the same supervisor, a functional test must be performed if the activity involves breaching a pressure-retaining item, and the qualifications of the inspection personnel must be approved by the OA organization.*

This is considered a reduction in commitment for SSCs in the FULL program and is not acceptable to the NRC due to a potential loss of independence.

STP Response to Question #7

OQAP text will be amended to specify the additional controls that will apply if "peer inspection" is performed on SSCs in the "Full" program category.

Request for Additional Information #8

The qualification of NDE personnel for both the FULL and BASIC programs will meet the requirements of SNT-TC- 1A-1980, which has not been endorsed by the NRC due to the excessive number of requirements that were downgraded by the use of "should" in lieu of "shall", instead of the 1975 edition. Please provide more definitive requirements for the training and qualification of these personnel.

STP Response to Question #8

As was depicted/discussed in the STP meetings during the week of May 5, 1997, STP use of the 1980 version of SNT-TC-1A during the operations phase was included in the FSAR and accepted by the NRC with the issuance of the Operating License. For clarification, the OQAP Chapter 2.0 table will be amended relative to R.G. 1.58 and will clarify actual practice.

Request for Additional Information #9

The NRC staff has indicated that an acceptable graded quality assurance program must include a means to reassess the safety significance categorization of SSCs and QA controls as new information becomes available, such as through operating experience or changes to plant design, to assure application of the proper QA controls. Please describe your plans to implement this criterion.

STP Response to Question #9

OQAP Chapter 2.0 will be amended to provide more discussion of the "Graded Quality Assurance" process. Included will be discussion of controlling/preserving items' critical functions, and our ongoing feedback process whereby the periodic evaluation of operating experience is accomplished and the appropriateness of quality program controls is re-evaluated as necessary.

Response to NRC Questions on Graded Quality Assurance Program/SSC Categorization
(Questions & Responses for 10-14)

Request for Additional Information #10

Please refer to question 3-6c in our August 16, 1996 RAIs. HL&P's categorization process for SSCs in the PRA appears to rely on individual basic event importance measures; e.g., if the individual measures are above or below a set of defined numerical guidelines, the SSC is "high" or "low" respectively. The categorization process for SSCs not in the PRA appears to rely on assigning weighing factors to several deterministic questions and combining the results into a safety "score", and categorizing each SSC based on the score.

The staff's current position is that safety-significance is best developed for system functions, not individual SSCs. System function safety significance may be determined by comparing contributing basic event importance measures to numerical guidelines. This determination should be done with the recognition that the importance of system functions will always be at least equal to the largest individual basic event's importance measure. As system redundancy increases, the system function importance may become much greater than individual basic event importance.

The safety significance categorization assigned to SSCs (including support system functions which can be treated as component functions for categorization) should be based on the safety significance of the functions the SSC supports. SSCs which support only low-safety-significant functions should be classified low-safety-significant. The safety significance of SSCs supporting high-safety-significant functions need not always be high, but each such categorization as low-safety significant should be explicitly evaluated and documented and generally done in conformance with licensee defined guidelines.

Justification for categorizing a SSC supporting a high-safety-significance function as low-safety-significant based on high reliability alone will not be acceptable because the high reliability of the SSC could be a result of the QA program. For basic events in the PRA, this means that a high risk achievement worth (RAW) is a strong indication that the SSC should be categorized as "high", regardless of the SSC's Fussel-Vesely (FV). Similarly, the scoring of SSCs not in the PRA should initially emphasize the consequence of the failure, and only consider a reduced category after evaluating the potential impact of reduced QA on that SSC and the possibility to detect unacceptable reductions in performance through performance monitoring and feedback mechanism.

For the reasons given above the staff believes that HL&P's SSC categorization process does not provide reasonable assurance that the SSCs are appropriately categorized consistent with their importance to safety. Please modify your categorization process such that a low FV does not automatically place SSCs in "low" regardless of the RAW, and make corresponding changes in the non PRA SSC scoring guidelines.

STP Response to Question #10

As noted by the Staff, component basic event importance is used to categorize SSCs. Basic event importance is used since basic events define those SSC failure modes which would prevent SSCs from performing their safety function(s), while the basic event importance calculation ranks the basic events relative to their contribution to key figure of merit such as core damage frequency. Basic event importance also allows the many functions of nuclear plant systems to be separated into those that support safety functions from those that support other system functions such as system maintenance and system testing. As a point of clarification, it should be noted that a low F-V alone does not automatically place SSCs in the "low" category. SSCs are categorized as low safety significant when both the SSC Risk Achievement Worth (RAW) value is less than 2.0 AND the associated F-V value is less than 0.005 per the EPRI PSA Applications Guide. Items in which the SSC RAW value is greater than or equal to 2.0 OR the associated F-V value is greater than or equal to 0.005 were placed in the medium risk significant category. A categorization of high safety significance was applied to SSCs for which both the RAW AND the associated F-V exceeded the designated threshold values.

Among those items for which we concur are as follows:

- We concur with the Staff in their statements that the SSC categorization assigned to SSCs should be based on the safety significance of the function(s) the SSC supports.
- We concur that the safety significance of SSCs supporting high safety significant functions need not always be high, but each such categorization as low safety significant should be explicitly evaluated and documented and generally done in conformance with licensee defined guidelines.
- As expressed by the Staff at a meeting held on April 21, 1997, we feel that there is merit in the Staff's concern that components with very high RAW values should be considered for inclusion in the Full QA program regardless of the component's reliability.

Based on the above discussion, STP proposes to revise the SSC categorization process by incorporating a cap on the component importance based on SSCs RAW value. The previous criteria will be retained, and an additional criterion will be added such that SSCs with a RAW value greater than or equal to 100 will be placed in the high risk significance category, regardless of the associated F-V value, and will be within the scope of the full QA program.

Additionally, the QA controls for SSC critical attributes in the Basic QA program with RAW values greater than 10 will be evaluated by the Graded QA Working Group and approved by the Comprehensive Risk Management Expert Panel to ensure they provide reasonable assurance that the SSC will perform their intended critical functions.

Request for Additional Information #11a

Please refer to Question 3-6e in our August 16, 1996 RAI. HL&P stated that possible unacceptable common cause failure (CCF) increase in "low" ranked SSCs will be controlled through evaluation and monitoring for Repetitive Maintenance Preventable Functional Failure (RMPFF).

Please provide a description of this process including a discussion on (a) the overlap in the coverage of the SSCs in the Maintenance Rule Program and the Graded QA program:

STP Response to Question #11a

One of the steps in implementing the Maintenance Rule (10CFR50.65) at the South Texas Project, is to track Repetitive Maintenance Rule Functional Failures (RMRFF) for all systems within the scope of the Maintenance Rule program. The programmatic aspects for establishing system level performance criteria not only includes RMRFFs, but also system unavailability/reliability (i.e., Maintenance Rule Functional Failures), or plant level criteria (Capability Factor, etc.). The determination of system performance criteria is performed for all systems within the scope of the Maintenance Rule regardless of their safety significance. Each system includes, as an element of the system level performance assessment, criteria that no repetitive functional failures occur. An assessment of system level performance criteria is performed on a monthly basis by the Maintenance Rule Expert Panel. It is during this process that timely identification of potential common cause failures would be identified. Any systems that have exceeded their performance criteria (i.e., RMRFF, Unavailability, or Reliability, etc.) will be evaluated for incorporating into the (a)(1) category of the Maintenance Rule. Once in the (a)(1) category, apparent cause evaluations are performed to identify specific corrective actions and specific goals are established to monitor the effectiveness of the identified corrective actions.

The repetitive and non RMRFFs are also recorded in the Equipment History Database. The Maintenance Rule defines a RMRFF as a recurring MRFF whose discovery date is within 18 months of the completion date for a previous MRFF of the same component or identical component in either unit, with the same failure mode and due to the same maintenance related cause. Using this criteria, data is collected from the Equipment History Database and is then used as a feedback for evaluating common cause events and developing corrective actions to prevent their occurrence.

There is considerable overlap between the two programs. In the Graded QA program, each system function is evaluated at a component level to determine whether or not the component's function is necessary for the system to perform its safety function(s). Once a component is identified to be necessary for the system to perform its safety function(s), then an evaluation of current commitments and requirements is performed to determine how those activities support the capability of the identified components to perform their intended function(s). In the Maintenance Rule, each system/function is evaluated to whether it meets the criteria to be within the scope of the Maintenance Rule program. Key deterministic questions (listed below) are used to identify a system to be within the scope of the Maintenance Rule or for establishing those function(s) that an SSC supports. The key deterministic issues discussed for each SSC is as follows:

- Safety-related System?
- Nonsafety-related systems/functions that mitigate accidents or transients?
- Nonsafety-related systems/functions that are used in the EOPs?
- Nonsafety-related systems/functions whose failure prevents safety-related systems/functions from fulfilling their safety function?
- Nonsafety-related systems/functions whose failure causes a reactor trip or safety system actuation?

For Maintenance Rule compliance, a comprehensive review of activities (i.e., commitments and requirements) and their associated value to SSC reliability or availability is not required to determine the plant specific Maintenance Rule scope. It is important to note that an important link between the two programs does exist and is essential for successful implementation of Graded QA. The performance monitoring and establishment of performance criteria as required by the Maintenance Rule represents a critical feedback and corrective action function for Graded QA. This important aspect of Graded QA ensures that the reliability of SSCs is maintained within acceptable boundaries commensurate with SSC safety significance. The programmatic link between Maintenance Rule performance criteria and monitoring (which is based on the station's PSA) provides a vital defense-in-depth function to ensure that any SSC degradation is identified and corrective actions are taken well before station risk levels are noticeably impacted. It is through this mechanism that low safety significant SSC performance is monitored to ensure that important and appropriate QA controls are identified and maintained.

Request for Additional Information #11b

(b) the ability of the process to systematically identify potential common cause failures in a timely fashion for groups of nominally identical SSCs classified as low-safety-significant, yet whose failure could fail high-safety-significant ' functions. This question may be addressed in the context of the apparent cause determination discussed in question 4 above.

STP Response to Question #11b

A back end analysis of all Work Orders and Preventative Maintenance activities is performed by the equipment history group in the Reliability Engineering division. Part of this review consists of determining whether or not the equipment failure was a Maintenance Rule Functional Failure (MRFF). If the component's failure mechanism is a MRFF, then a further evaluation is performed to determine whether the failure was a repetitive MRFF per the criteria stated above in the response to 11a. If a repetitive MRFF is determined to have occurred, then the Equipment History Database is updated to capture this information. This data also plays an important role in the evaluation of system level performance criteria. A repetitive failure will automatically place a system from (a)(2) of the Maintenance Rule into category (a)(1). As stated previously, the Maintenance Rule Expert Panel meets monthly to discuss the tracking/trending of (a)(1) and (a)(2) systems.

In conclusion, data for determining potential increases in common cause rates for both low and high risk significant systems is being monitored in a timely fashion and evaluated for corrective actions through the Maintenance Rule program.

Request for Additional Information #12

Please refer to question 3-10 in our August 16, 1996 RAI. As presented by the NRC staff to the ACRS, one of the principles being suggested to guide risk informed regulation is that any proposed increase in risk is small and does not cause the NRC safety goals to be exceeded. Although the risk impact of grading QA elements on individual SSCs is expected to be minimal, a large number of SSCs may be subject to reduced OA requirements. It is recognized that limited data is available to define the impact of quality assurance programs on SSC reliability. Accordingly, licensees may chose to provide a qualitative evaluation addressing principle four directly, eg. that any increase in risk will be small and the safety goals will not be exceeded. Alternatively, the licensee may use a quantitative evaluation based on, for example, sensitivity studies to show that the change in CDF and LERF as a result of the implementation of the graded OA program will be small. Please explain how HL&P plans to address the aggregate impact of the graded QA program on risk.

STP Response to Question #12

Both quantitative and qualitative assessments of aggregate risk will be performed at South Texas. The aggregate impact of the Graded QA program on station risk will be monitored by the PSA maintained by South Texas through periodic updates of plant specific data and quantification of the PSA models. The periodic Maintenance Rule reporting process will also evaluate station SSC performance for aggregate effects. Finally, the Comprehensive Risk Management Program (CRMP) Expert Panel will combine both quantitative and qualitative evaluations to assess the overall station risk impact due to SSC performance and all implemented risk informed programs after each plant specific data update of the PSA. These mechanisms, in addition to the close functional association of the Maintenance Rule and PSA groups, provide ongoing observation and scrutiny of SSC performance trends including any impacts due to the Graded QA program.

With regard to quantitative approaches to bound the impact of Graded QA on SSCs assigned to the Basic QA program, a number of sensitivity studies have been performed. These studies have been performed as part of the PSA risk ranking approach and have focused specifically on low safety significant SSCs assigned to the Basic QA program. Global changes to plant specific SSC failure rates for selected component types have been performed to bound the risk impacts assuming SSC failure rates were allowed to increase without corrective actions or mitigation such as would be required by the station's corrective action processes or the Maintenance Rule Program. The Configuration Risk Management Program at South Texas represents a comprehensive search for plant configurations where selected SSC performance could become critical. In these studies since SSCs are removed from service (i.e., they are perfectly failed), a bounding analysis results which identifies the range of risk impact due to the varying the SSC failure rate to the worst case. The fact that actual station risk is being maintained at or below the current average CDF calculation provides empirical evidence that the failure rates associated with low safety significant SSCs do not have adverse effects on station risk levels. Currently, sensitivity studies have been performed on a majority of the PSA systems covered by the Maintenance Rule. These studies, identified as "Sensitivity Studies for the Impact of Performance Criteria on Safety," are available for review by the NRC. Based on the above information, it is the position of the South Texas Project that any increase in plant risk resulting from changes in the quality assurance program will be small and will not result in the CDF or LERF frequency exceeding the NRCs stated Safety Goals.

Request for Additional Information #13

Please refer to question 3-9 in our August 16, 1996 RAI. The RAI stated that the use of PRA in regulatory matters must maintain the philosophy of defense in depth. HL&Ps response that the PRA is the proper tool for evaluating defense in depth does not fully address staff concerns.

As presented by the NRC staff to the ACRS, an acceptable set of guidelines for making the assessment that the philosophy that defense in depth is maintained might include addressing the following items.

- *A reasonable balance is preserved among prevention of core damage, prevention of containment failure, and consequence mitigation.*
- *Over-reliance on programmatic activities to compensate for weaknesses in plant design is avoided.*
- *System redundancy, independence, and diversity are preserved commensurate with the expected frequency and consequences of challenges to the system (e.g., no risk outliers).*
- *Independence of barriers is not degraded.*
- *Defenses against human errors are preserved.*

The staff recognizes that implementation of graded QA control will have a minimal impact on several of these items. For example, the GQA process will not result in changes to the plant configuration and thus no existing plant barriers will be removed. Please provide a brief discussion illustrating why HL&Ps implementation of graded QA will maintain the defense in depth philosophies.

STP Response to Question #13

With regard to defense in depth, it is HL&P's position that the implementation of Graded QA will maintain current levels of defense in depth, and not result in a decrease in defense in depth. It should be noted that the level of defense in depth existing at STP is a result of deterministic factors such as the plant design basis, plant safety limits, and operating margins. The defense in depth guidelines identified in the NRC's question are addressed in part or in whole by the plant design of the STP units as reflected by the living plant specific PSA program and as conserved by other approved station programs such as the Corrective Action Program, Equipment Testing programs (i.e., Inservice Testing), Technical Specifications, Maintenance Rule, Configuration Risk Management, and Comprehensive Risk Management. It is intended that pertinent performance indicators, both at the equipment level and plant level, will be used to identify the need for station corrective actions processes to be initiated to ensure compensatory actions or other remedial activities outside normal processes are not required. In conjunction with each other, these programs ensure adequate levels of defense in depth are maintained.

In certain cases, additional qualitative assessments must be performed to ensure adequate defense in depth levels are maintained. This is one of the primary functions of the station's Comprehensive Risk Management Program Expert Panel. The Graded QA process being implemented at South Texas preserves defense in depth, in conjunction with other station programs listed above, through the preparation of each system's Graded QA Basis Document which identifies key safety functions and their associated supporting SSCs.

With respect to this RAIs defense in depth guidelines the following is an additional discussion for each of the concepts presented.

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

  The implementation of Graded QA serves to provide the balance among prevention of core damage, prevention of containment failure, and consequence mitigation through the use of the Probabilistic Safety Analysis, the Graded QA Working Group and the Comprehensive Risk Management Expert Panel. No changes which reduce Defense in Depth, will be implemented without appropriate engineering or other technical justification to amend the station's safety analyses, safety limits, system or equipment actuation setpoints, safety margins, or other calculations which are necessary to establish the station's design or operating basis. Implementation of the Graded QA process does not of itself alter the station's response to transients or other initiators and will not alter the preventive or mitigative capability of station equipment.

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

  Graded QA will not be used to reduce design margins or to compensate for defense in depth by using such elements such as operator workarounds to compensate for a lack of redundancy.

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

  The current levels of system redundancy presently existing in the STP design will not be changed due with the implementation of Graded QA. Appropriate engineering analysis would be required to justify and/or implement changes which would revise the level of redundancy, independence, or diversity of the STP design.

- *Independence of barriers is not degraded.*

  Implementation of Graded QA will not remove or alter existing physical barriers. Breaches in physical barriers will be performed in accordance with approved plant procedures outside the Graded QA processes (e.g., fire protection).

- *Defenses against human errors is preserved.*

  Implementation of the Graded QA process through the use of Probabilistic Safety Analysis, the Graded QA Working Group, the Comprehensive Risk Management Expert Panel, and the Corrective Action Program will not result in a significant increase in risk due to human errors. Human performance problems or related issues will continue to be processed and trended through the Corrective Action Program.

Request for Additional Information #14

What level of detail with respect to the process and guidelines developed to determine the safety-significance categorization of all SSCs within the graded QA program will be described? The staff expectation is that a general description of the process be included in the QQAP or some other document. If it is described in another document, will it be incorporated by reference into the OQAP such that it will be considered to be legally part of the FSAR and therefore subject to the relevant change control requirement (i.e., 50.54(a))?

STP Response to Question #14

A general description of the process and guidelines developed to categorize SSCs according to their safety significance will be provided to the Nuclear Regulatory Commission along with our submittal of the finalized OQAP.

CLARIFICATIONS/EXCEPTIONS TO USNRC R.G. and ANSI STANDARDS

R.G./ANSI STANDARD	FULL PROGRAM	BASIC PROGRAM
R.G. 1.8, rev. 1 (9/75)	None.	None.
ANSI N18.1, 1971	4.2.2 - The Operations Manager requirements regarding holding a Senior Reactor Operator license are met by the Unit Operations Managers.	Same as full.
R.G. 1.28, rev. 0 (6/72)	This R.G. is not applicable to operations phase activities.	Same as full.
ANSI N45.2, 1971	This standard is not applicable to operations phase activities.	Same as full.
R.G. 1.33, rev. 2 (2/78)	C.2 - the specific revisions of the listed standards to which STP is committed are in this table and are not necessarily the "latest" revision.	Same as full.
	C.4 - Chapter 15.0 of the STP OQAP describes the audit program at STP that meets the intent of R.G. 1.33, rev. 2, position C.4 regarding frequency of audits	Same as full.
	C.4.a.b.c. - STP performs these audits in accordance with a nominal biennial frequency.	Same as full.
ANSI N18.7 - 1976/ ANS 3.2	3.4.2 - refer to R.G. 1.8 regarding Operations Manager holding a Senior Reactor Operator license.	Same as full.
		3.4.2 refer to R.G. 1.5.8 regarding use of personnel not qualified in accordance with ANSI N45.2.6.
	4.5 - refer to R.G. 1.33 coverage regarding audit frequency.	Same as full.
	5.2.6 (5th paragraph) - independent verification may be concurrent with (same time as) work performance.	Same as full.
	5.2.7 (1st paragraph) - STP will use current approved design bases as opposed to original design bases.	Same as full.

CLARIFICATIONS/EXCEPTIONS TO USNRC R.G. and ANSI STANDARDS

R.G./ANSI STANDARD	FULL PROGRAM	BASIC PROGRAM
ANSI N18.7/ANS 3.2 (cont'd)		5.2.7 - STP will perform inspection as deemed necessary, based on the relative complexity of the work.
	5.2.7.1 (5th paragraph) - STP takes exception to use of the word "promptly" with regard to determining, evaluating and recording the causes of malfunctions. The STP Corrective Action Program includes the elements with regard to timeliness of action associated with causal analyses.	Same as full.
		5.2.7.2 - refer to table coverage of ANSI N45.2.11, 1974.
		5.2.13 (1st paragraph) - refer to table coverage of ANSI N45.2.13, 1976.
		5.2.13.1 (1st paragraph) - refer to table coverage of ANSI N45.2, 1971.
		5.2.13.4 (5th paragraph) - refer to table coverage of ANSI N45.2.2, 1972.
	5.2.15 (4th paragraph) - Chapter 8.0 of the OQAP describes the requirements for control and issuance of documents, which meets the intent of R.G. 1.33, rev. 2. The intent of the biennial review is accomplished by other controls that assure that procedures are appropriately reviewed and revised to incorporate information based on plant operations, design changes, regulatory requirements, industry experience and other conditions that may impact plant procedures.	Same as full.
		5.2.17 (3rd paragraph) - STP may not implement the requirement for conduct of inspections in a manner similar to that associated with construction phase activities (i.e., regarding use of personnel not qualified to ANSI N45.2.6).

CLARIFICATIONS/EXCEPTIONS TO USNRC R.G. and ANSI STANDARDS

R.G./ANSI STANDARD	FULL PROGRAM	BASIC PROGRAM
R.G. 1.38, rev. 2 (5/77)	None.	None.
ANSI N45.2.2, 1972	2.4 - Audit personnel are qualified in accordance with STP's commitment to R.G. 1.146/ANSI 45.2.23.	Same as full. 2.4 - Offsite oversight of vendors of items in the Basic category will only be performed as deemed necessary.
R.G. 1.58, rev. 1 (9/80)	C.2 - STP is committed to SNT-TC-1A, 1980. STP treats the recommendations ("should") of the 1980 edition as requirements ("shall").	Same as full.
ANSI N45.2.6, 1978		1.2 (1st paragraph) - With the exception of receipt inspection, personnel may perform inspections, examinations and tests provided they are experienced, task qualified journeymen, or supervisors, who did not perform or directly supervise the activity being inspected, examined or tested. These individuals shall also receive training to the Quality organization's inspection procedure/ process/methods in accordance with a Quality approved training program; and Quality will provide periodic oversight of the inspection activities.
	1.2 (3rd paragraph) - refer to table coverage of R.G. 1.28.	Same as full.
	1.4.4 - refer to table coverage of R.G. 1.74/ANSI N45.2.10.	Same as full.

CLARIFICATIONS/EXCEPTIONS TO USNRC R.G. and ANSI STANDARDS

R.G./ANSI STANDARD	FULL PROGRAM	BASIC PROGRAM
R.G. 1.64, rev. 2 (6/76)	None.	C.2 - STP may implement the requirement regarding design verification as prescribed in ANSI N45.2.11, 1974, 6.1, second paragraph/second sentence, as opposed to R.G. wording.
ANSI N45.2.11, 1974	None.	3.2 (1st paragraph) - STP will require personnel to consider items 1 through 28, but a documented checklist may not be required. 6.3 - Verification and checking of design may be accomplished through supervisory or management review/approval as provided for in 6.1 Personnel will be required to consider items 1 through 19, but a documented checklist may not be required.
R.G. 1.74 (2/74)	Not applicable to STP. STP uses ANSI/ASME NQA-1-1983 for Quality Assurance Terms and Definitions.	Same as full.
ANSI N45.2.10, 1973	Same as R.G. 1.74 above.	Same as full.
R.G. 1.123, rev. 1 (7/77)	C.6.b.and e. - The referenced section of ANSI N45.2.13 will be implemented as written.	C.6 - The referenced sections of ANSI N45.2.13 will be implemented as written. STP will not use 10.3.3 of ANSI N45.2.13, 1976 as a sole basis for acceptance of items.
ANSI N45.2.13, 1976	Various sections refer to ANSI N45.2. Refer to table coverage of R.G. 1.28 and ANSI N45.2.	Same as full.

CLARIFICATIONS/EXCEPTIONS TO USNRC R.G. and ANSI STANDARDS

R.G./ANSI STANDARD	FULL PROGRAM	BASIC PROGRAM
ANSI N45.2.13, 1976 (cont'd)	5.3.and 5.4 - Provisions are established for, in special cases and with management approval, completion of these activities after award of contract.	Same as full.
		7.2.1, 7.3.1 - These activities will only be implemented as deemed necessary.
	9.0 - This section will be implemented based on the scope, complexity and safety significance of the items being procured.	Same as full.
		10.3.1 - This section will only be implemented as deemed necessary.
		12 - This section will only be implemented as deemed necessary.
R.G. 1.144, rev. 1 (9/80)	C.1 - refer to table coverage of R.G. 1.28 and ANSI N45.2. refer to table coverage of R.G. 1.74 and ANSI N45.2.10	Same as full.
	C.3.a(1) - refer to table coverage of R.G. 1.33 regarding audit frequency.	Same as full.
		c.3.b STP will audit vendors only as deemed necessary.
		STP will perform biennial evaluations.
ANSI N45.2.12, 1977	None.	STP will audit vendors only as deemed necessary. These audits will be conducted as unplanned/unscheduled audits.
R.G. 1.146, rev. 0 (8/80)	C.1 - refer to table coverage of R.G. 1.28 and ANSI N45.2. refer to table coverage of R.G. 1.74 and ANSI N45.2.10	Same as full.

CLARIFICATIONS/EXCEPTIONS TO USNRC R.G. and ANSI STANDARDS

R.G./ANSI STANDARD	FULL PROGRAM	BASIC PROGRAM
ANSI N45.2.23, 1978	1.2 - refer to table coverage of R.G. 1.28.	Same as full.
	1.4 - refer to table coverage of R.G. 1.74.	Same as full.
	2.21 - refer to table coverage of R.G. 1.28.	Same as full.
	2.3.3.1 - refer to table coverage of R.G. 1.28.	Same as full.