Enclosure 3

STPNOC Handout Material

South Texas Project/Nuclear Regulatory Commission Meeting

Remaining Open Issues on the Request for Exemption from Special Treatment Requirements

Meeting of the
Risk-Informed Licensing Panel

April 24, 2001

South Texas Project Attendees

- Joe Sheppard, Vice President of Engineering & Technical Services
- Glen Schinzel, Exemption Request Project Manager
- Scott Head, Licensing Manager
- Rick Grantom, Risk Management Manager
- Steve Frantz, STP counsel

Background

- STP Has a Robust Categorization Process
  - PRA and Importance Measures
  - Deterministic Evaluation
  - Higher of PRA or Deterministic Category Is Used
- LSS/NRS Components Have Little or No Safety Significance
  - Typical examples include vents, drain valves, indicators, etc.
  - Little or no contribution to accident prevention or mitigation

Background

- No Significant Impact on Reliability Expected from Use of Commercial Practices
  - Commercial practices at STP have proven effective on BOP components
  - STP analysis of industry data shows commercial practices are effective
    - STP evaluated 33 component types (74 billion component hours)
    - 21 component types had lower failure rates for non-safety-related components than safety-related components
    - Only 1 component type had higher failures rates for non-safety-related components than safety-related components

Background

- Decreases in Reliability of LSS/NRS Components Would Not Significantly Affect PRA Results
  - STP sensitivity study postulated factor of 10 increase in failure rates of all LSS components
  - CDF and LERF increased by about 1%
  - Noted increase in CDF and LERF is small fraction of acceptance criteria in RG 1.174

Summary of Remaining Open Issues

- Open issues are detailed on attached pages - summary includes the STP concern, our perception of the staff's position, and the delta between these two positions.
- Open issues include:
  - Equipment Qualification
  - Seismic
  - Safety-related SSC testing
  - Overall detail in the FSAR
    - Categorization
    - Procurement
    - Management & Oversight

Summary of Remaining Open Issues

- Pressure boundary categorization
- Guidance provided in SER on what constitutes effective implementation

Environmental Qualification

- **STP Position**
  - Will use five-tiered procurement approach
  - One or more of the five options may be used
  - Will ensure that design functional requirements are met
- **Staff Position**
  - Official staff position has not been received
  - Design basis environmental parameters detailed in FSAR
  - NRC has indicated that a combination of calculations, multiple discipline analysis, test data, and operating experience must be used

Environmental Qualification

- **Delta**
  - The formal staff position is not known
  - It is not clear that the staff will permit procurement to be satisfied by vendor documentation, equivalency evaluations, engineering evaluations
  - Detail in the FSAR is too prescriptive

Seismic

- **STP Position**
  - Will use five-tiered procurement approach
  - One or more of the five options may be used
  - Design functional requirements to be met
- **Staff Position**
  - 5 OBE followed by 1 SSE criteria must be met/demonstrated
  - Detailed engineering analysis and testing viewed as only viable options
  - Is willing to grant exemption, but doesn't see how it could be effectively implemented

Seismic

- **Delta**
  - five-tiered approach viability
  - 13.7.3.3.2 language of 'seismic (earthquake motion, as described in the design bases, including seismic inputs and design load combinations)'

Conclusions on Seismic and EQ

- Focus continues to be on "how" STP intends to qualify components with Low Safety Significance
- STP's Approach Is Commensurate with Safety
  - Vendor documentation provides sufficient confidence as shown by commercial experience
  - Engineering evaluations provide sufficient confidence for like-for-like replacements and minor differences
  - STP will use more detailed engineering analysis and/or testing for more substantial differences

Conclusions on Seismic and EQ

- Summary
  - Reduced assurance is not apparent with respect to EQ and seismic qualification of LSS/NRS components
  - Absent relief, the exemption will provide essentially no cost savings for procurement

SSC Testing

- **STP Position**
  - LSS/NRS SSCs will be appropriately tested and inspected following commercial practices and insights
- **Staff Position**
  - LSS/NRS SSCs must continue to receive equivalent-type testing as currently required
  - Successful operation/testing does not provide sufficient assurance
  - Data gathering, trending, and evaluation is necessary

SSC Testing

- **Delta**
  - Whether data collection, trending, and evaluation should be performed
- STP's Approach Is Commensurate with Safety
  - STP has agreed to exercise ASME pumps and valves during normal operation or test periodically
  - These activities will demonstrate that the pumps and valves are functional
  - Any failures will be subject to STP's Appendix B Corrective Action Program

SSC Testing

- Summary
  - Reliance on commercial practices has not been fully accepted
  - Data collection, trending, and evaluation for LSS/NRS components is not warranted and is unduly burdensome
  - Specification of 'how' testing is to be accomplished is unnecessary for LSS/NRS components

Detail in the FSAR

- **STP Position**
  - New NRC guidance to focus on 'whats' and not the 'hows'
  - Extensive detail had been provided to support closure of RAIs and Open Items
  - FSAR continues to become more detailed
- **Staff Position**
  - Current detail in FSAR 13.7 reflects the minimum detail needed to make a finding in the SER
  - Additional detail is needed on containment integrity sensitivity study, pressure boundary, etc.

Detail in the FSAR

- **Delta**
  - 13.7.2.4 - detail of numerical scores to answers and the definitions to support the categorization is unnecessary
  - 13.7.2.5 - defense in depth bulleted details are more appropriate for the SER rather than the FSAR
  - 13.7.3.2 - no need for technical evaluation for safety-related HSS/MSS components
  - 13.7.3.3.2 - the detailed 'how' that STP will use to procure replacement SSCs is unnecessary - detailing environmental and seismic attributes is not needed
  - 13.7.3.3.7 - details concerning personnel qualifications, procedures, M&TE programmatic approach is not needed

Detail in the FSAR

- STP's Approach Is Commensurate with Safety
  - STP's sensitivity studies show that substantial increases in failure rates of LSS components would have no significant impact on risk
  - Such increases are well beyond what may be reasonably expected to occur due to the change from special treatment to commercial practices
  - Given the large margins of safety shown by STP's sensitivity studies, the details of STP's commercial treatment are unimportant
    - E.g., changes in the details will not have any appreciable impact on risk and are bounded by the sensitivity studies

Detail in the FSAR

- Summary
  - There will be substantial future burden associated with managing the level of detail proposed in the FSAR
  - The details desired are not warranted for low safety significant components

Pressure Boundary Categorization

- **STP Position**
  - GQA approach conservatively categorizes pressure boundary
  - RI-ISI methodology supplements the ASME Class 1/2 categorization
  - Streamlined RI-ISI-type approach supplements ASME Class 3 categorization
- **Staff Position**
  - GQA categorization inadequate for pressure boundary
  - RI-ISI categorization must be used to supplement categorization for ASME Repair and Replacement for all ASME classes

Pressure Boundary Categorization

- **Delta**
  - Whether STP should be allowed to use alternate approach to supplement categorization for ASME Class 3 components
- Class 3 components
  - Class 3 components have the least important pressure boundary considerations
  - Currently, NRC regulations have only minimal inspection requirements for Class 3 components
  - Would impose substantial additional burden on STP with respect to categorization of Class 3 components

Pressure Boundary Categorization

- STP's Approach Is Commensurate with Safety
  - GQA approach considers impact on system functions from pressure boundary failure
  - STP's alternative approach considers spatial effects on other safety significant SSCs from pressure boundary failure
  - Reduced treatment of Class 3 components inside containment does not pose any new EQ or spatial effects concerns

Pressure Boundary Categorization

- Summary
  - Requires STP to use two categorization processes for pressure boundary
  - EPRI RI-ISI approach is viewed by NRC as only acceptable method
  - STP's approach adequately accounts for the risk of pressure boundary failure
    - STP believes that the GQA categorization process is adequate for all functions, including pressure boundary (based on comparison with RI-ISI results)
    - STP has agreed to supplement its process with alternate approach
    - No significant safety benefit to applying EPRI RI-ISI to Class 3 components

Implementation Guidance in SER

- **Staff Position**
  - Implementation guidance is needed to give insight to STP on staff's expectations

  STP Position
  - Commercial practices are sufficient
  - Detailed guidance on what constitutes 'effective implementation' or 'ineffective implementation' in the SER will establish expectations that go beyond commercial practices
  - Guidance becomes default 'commitments' that limit implementation

Implementation Guidance in SER

  - STP will not have an opportunity to comment on the guidance before it appears in the final SER

- **Delta**
  - Resolve whether guidance should be provided in the SER
- Summary
  - It is inappropriate for NRC to place guidance in the SER without providing STP a prior opportunity to review and comment
  - The staff's proposal threatens to impose new requirements that could impact the viability of the exemption

Future Activities

- What should be NRC's inspection approach to LSS/NRS components?
- Process should proceed as a pilot and learn from feedback that is received
- STP does not expect any significant changes in reliability of LSS/NRS components
- STP's sensitivity studies demonstrate that even a postulated 10 fold increase in failure rates would not significantly affect risk
- LSS/NRS components do not warrant substantial NRC inspection resources

Conclusions

- Significant progress has been made
- Few open issues remain
- Use of commercial practices for low safety significant components not fully accepted
- Level of detail in the FSAR is excessive given the low safety significance of the components
- Cost-effective implementation of the exemption is challenged