

REQUEST FOR ADDITIONAL INFORMATION NEEDED TO COMPLETE THE  
TECHNICAL REVIEW OF THE  
SOUTH TEXAS PROJECT (STP) RMTS INITIATIVE 4B FULL PLANT PILOT

1. It is stated (on page 5) that the proposed change (i.e., allowing flexible AOTs/CTs) *“addresses the principles of risk-informed decision-making set forth in Regulatory Guides 1.174 and 1.177.”* It is further stated (on page 6) that *“the proposed change does not measurably change overall average core damage frequency for STP.”* The staff requests further clarification of these statements because there may be a difference in the understanding of such statement between the staff and the industry:
  - Please explain how the risk increases to be used in RG 1.174 criteria will be calculated (e.g., assessment of configuration risk vs. risk associated with the AOT/CT extensions, credit for compensatory measures, risk increases measured from the “zero maintenance” baseline or the “average maintenance” baseline). If the risks associated with the extensions are not assessed separately from the overall configuration risks, please explain how the guidance of RG 1.174 will be implemented.
  - If contingency actions and compensatory measures are credited in assessing risk increases, risk-informed regulation requires procedures and administrative controls as well as appropriate PRA modeling for such actions and measures. Please discuss how this requirement will be implemented.
2. Describe the process, including criteria, for initiating a plant shutdown. How will this process address the proposed removal of current constraints to plant operation at power imposed by the fixed AOTs/CTs? The staff believes that the guidance provided in maintenance rule (a)(4) regarding the initiation of plant shutdown needs improvement to compensate for the proposed removal of current constraints to plant operation at power imposed by the TS fixed AOTs/CTs. The staff believes that a risk-informed shutdown process based on clear generic principles and criteria is needed. Please discuss.
3. Does STP have a process for identifying contingency actions and compensatory measures and determining their acceptability for both planned and emergent conditions? Will there be procedures and administrative controls for contingency actions and compensatory measures credited in risk assessments? Will there be any plant-specific guidance in assessing the risk impact of contingency actions and compensatory measures credited in risk assessments? Please discuss how STP proposes to address this issue in the risk-informed decision-making process for flexible AOT/CT extensions.
4. An important element of the proposed process, which is applicable to emergent conditions, is the ability to promptly consider and resolve common cause issues. What guidance is, or is expected to be, available at STP on how to identify potential common-cause issues and on strategies and actions to promptly resolve any such issues? Is (will be) plant shutdown an option in this strategy? Please discuss.

Enclosure 3

5. Does STP have guidance for considering unmodeled external challenges (e.g., challenges beyond the scope of PRA evaluation)? Please discuss.
6. Does STP have guidance for identifying high risk configurations in a timely manner? Will “high risk configurations” be pre-assessed? Please discuss.
7. Does STP have guidance for considering the impact of inoperabilities on LERF? The staff believes that guidance is required to ensure that the increase in LERF (when equipment important to LERF is out of service) is assessed and considered in the decisionmaking process when an AOT/CT extension is considered. Also, please comment on the adequacy of the STP PRA models to calculate LERF increases. Will they be detailed assessments and/or bounding-type calculations?
8. In the STP response to Acceptance Review RAI #3b, it is stated that “*establishing separate TS criteria for emergent and planned conditions would be counterproductive and administratively burdensome.*” The staff believes that the distinction between planned and emergent conditions is already part of the Maintenance Rule (a)(4) guidance (e.g., see “action thresholds based on quantitative considerations,” Section 11 of NUMARC 93-01 endorsed by Regulatory Guide 1.182). This distinction, when is properly tied to clear criteria for allowed risk increases, can be used (1) to compensate for the proposed removal of current constraints imposed by the fixed AOTs/CTs and (2) to develop a well-defined strategy for initiating a plant shutdown. For example, during an AOT/CT extension which is voluntary, will ICDPs greater than 1E-5 or instantaneous risks greater than 1.0E-3/year be allowed? If the answer is no, shouldn’t an ICDP greater than 1E-5 or an instantaneous risk greater than 1.0E-3/year require the initiation of plant shutdown? Furthermore, the industry’s RMTS guide states that preventive maintenance involving an AOT/CT extension will be planned so that it is completed before the ICDP reaches the value of 1E-6. Please discuss.
9. In the STP response to Acceptance Review RAI #2, regarding the lack of information about the risk assessments that support the proposed changes to the technical specifications described in Table 2, it is stated that “*general risk insights*” are included in Table 2 and that “*the level of detail need to be resolved in a meeting with the NRC.*” The staff notes the following:
  - a. For many of the most risk significant proposed changes it is explicitly stated that the risk basis will be provided later.
  - b. No risk insights or even a brief risk-based justification are provided for most of the proposed changes (see Table 2 column, labeled “Risk Basis Calculated STP AOT before Backstop”). Statements, such as “30 days (backstop)” and “Not risk significant” cannot be considered risk insights or appropriate risk-based justification for the proposed changes.
  - c. Many requested TS changes are not associated with Initiative 4b. Such changes should be submitted as separate risk-informed amendments.
  - d. In many cases the “front-stop” AOT is being extended or arbitrarily defined (e.g., when new action statements involving failure of more than one train are

introduced). Extending the “front-stop” AOT or defining a “front-stop” for new actions requires separate risk-informed amendments according to RG 1.177.

- e. Entries in Table 2 column labeled “Risk Basis Calculated STP AOT Before Backstop” need clarification. What do they represent? For example, what does it mean “12 hours” risk-based AOT before back-stop or “1 inoperable train of CCW: 29 years” AOT before backstop? Please explain.
10. In the STP response to Acceptance Review RAI #2, regarding the lack of information about the risk assessments that support the proposed changes to the technical specifications described in Table 2, it is stated that *the PRA quality evaluation is expected to provide a substantial level of confidence in the risk assessments*. Although the staff does not disagree with this statement, it is important to confirm that the process of extending AOTs/CTs will be properly implemented. There are cases where uncertainties in PRA models and data can have a significant impact on the decision-making process. The PRA quality evaluation is not expected to fully address this issue. In addition, the application of the RMTS process to some representative and “bounding” plant configurations would facilitate discussion between the industry and the staff and would provide useful input to the RMTS Guide currently being developed. For this purpose, it is proposed that STP and NRC staff meet to select a suitable set of plant configurations to apply the proposed Initiative 4b process. The analyses and results of such applications would be reviewed by the staff and discussed with STP.
11. In the STP response to Acceptance Review RAI #6, it is stated that for STP it is expected that Initiative 7 will be subsumed by Initiative 4b. STP staff stated, during follow-up meetings with the staff, that this is possible due to the good separation of the three STP safety system divisions. The staff need more detailed information about the existing divisional separation at STP and how this design feature will be incorporated in the PRA to address the inoperability of affected safety equipment, regardless of the cause. Please discuss.
12. An explanation of when the STP CRMP/RMG process would be utilized when equipment is “Tech Spec inoperable” yet is “PRA functional,” and explain the rationale for those circumstances.
13. The level of documentation required for an Initiative 4b risk assessment must be described; the documentation must be adequate for inspectors to verify the assumptions and results of the STP CRMP process.
14. When in limiting condition for operation (LCO) 3.8.1.1 action f (Table 2), with two or three required standby diesel generators (SDGs) inoperable, please clarify why the LCO is changed from the current 2 hours to 12 hours. Also, if all three SDGs are inoperable, the risk basis calculated AOT before backstop is 40 hours; justify operating for 40 hours when all SDGs are inoperable. We believe that application of Specification 3.13 is inappropriate in this case.
15. With one required load sequencer inoperable and one required SDG not associated with the inoperable sequencer also inoperable, what would be the maximum time allowed by

specification 3.13 assuming another safety system also becomes inoperable? Provide various examples.

16. The new LCO 3.8.3.1 action a, requires that with one or more A.C. vital distribution panel(s) either not energized from its associated inverter, or with the inverter not connected to its associated D.C. bus: (1) within 2 hours re-energize the A.C. distribution panel(s) or apply Specification 3.13. Please provide the following:
  - a. Why the LCO is changed from one A.C. vital distribution panel to one or more A.C. vital distribution panel(s).
  - b. Why would you go to Specification 3.13 when you need only to just re-energize the A.C. distribution panel which can be accomplish in 2 hours. We believe entering in Specification 3.13 in this case is inappropriate.
17. It is stated on page 8 that in cases where there are multiple components inoperable in more than one train, the calculated risk-informed AOT for the combinations may be less than currently prescribed in technical specifications. Please provide an example in the electrical area.
18. It is stated on page 7, fifth para, that STP will not unnecessarily extend AOT times such that equipment availability and reliability is adversely affected or in conflict with maintenance rule requirements. What would be your course of action in case an equipment reliability does not satisfy the maintenance rule goals.
19. Provide justification for changing the current 3.8.2.1 actions a and b to new action requirement that combines both batteries and chargers. Is this change part of the risk informed technical specification amendment request?
20. Page 10 discusses the compensatory measures that STP takes during the extended AOT. The staff feels that these measures are not adequate when an electrical equipment such as diesel generator is taken out for an extended period. Other compensatory measures that must also be included are as follows:
  - a. The condition of the offsite power supply, switchyard and the grid will be evaluated prior to entering the extended AOT for elective maintenance. An extended SDG AOT will not be entered to perform elective maintenance when grid stress conditions are high such as during summer temperature and / or high demand.
  - b. No discretionary switchyard maintenance will be allowed. In addition, no discretionary maintenance will be allowed on the main, auxiliary or startup transformers associated with the unit.
  - c. No maintenance or testing that affects the reliability of the trains associated with the OPERABLE SDGs will be scheduled during the extended AOT. If any testing and maintenance activities must be performed while the extended AOT is in effect, it is recognized that a 10CFR50.65 (a)(4) evaluation will be performed.

- d. The steam driven emergency feedwater pump will not be taken out of service for planned maintenance activities and will be treated as protected equipment.
  - e. The system dispatcher will be contacted once per day and informed of the SDG status along with the power needs of the facility.
21. The staff has been granting SDG AOT extensions up to 14 days provided the licensees have installed an extra A.C. power source or make available the alternate A.C. source installed to satisfy the requirements of station blackout rule. This extra power source can be substituted for an inoperable SDG during the extended AOT. Additionally, these requests are supported by a PRA analysis that demonstrate that overall risk is very low during the extended outage. In view of the above, provide justification for extending the AOT beyond 14 days without an extra power source.
21. The STP TS 3.13 Actions require determining that the plant configuration is acceptable for a completion time extension beyond the [Front Stop AOT.] It also requires determining that the configuration is acceptable for completion time extension beyond the [Front Stop AOT] whenever configuration changes occur that may affect plant risk. Specify the allowable time to complete the required determination process and justify that the associated risk is negligibly small.
22. The 30 day CT backstop needs to be explained and justified.
23. For the following specifications discuss application of the risk-informed CT (RICT) determination process to conditions not currently addressed by the STP Technical Specifications (TS), including loss of function conditions. Discuss compensatory measures including accident mitigation strategies, and the availability of alternative safety and non-safety accident mitigation systems. Justify the proposed changes to the TS.
- a. STP TS 3.4.2.2 - Pressurizer Code Safety Valves: WOG STS 3.4.10 , Action A requires that with one pressurizer safety valve (PSV) inoperable, restoration must take place within in 15 minutes. The completion time (CT) of 15 minutes reflects the importance of maintaining the RCS overpressurization protection systems. Action B requires that if the inoperable PSV cannot be restored within the CT or two or more PSVs are inoperable, the plant be brought to MODE 3 within 6 hours and in MODE 4 in the following 6 hours. The proposed TS 3.4.2.2 allows one or more PSVs inoperable up to 1 hour, or the RICT for restoration. The use of a RICT for two or more PSVs inoperable is not consistent with either the current STP TS or the STS.
  - b. STP TS 3.4.4 (ACTION c) - PORVs and Block Valves: Action c of the current TS 3.4.4 specifies requirements for the plant conditions with both PORVs inoperable due to causes other than excessive seat leakage, and is consistent with Action E of STS 3.4.11 that requires that the plant be brought to MODE 3 within 6 hours and to MODE 4 within 12 hours for both PORVs inoperable. The use of a RICT with both PORVs inoperable is not consistent with either the current STP TS or the STS.

- c. STP TS 3.5.1 (Action a) - Accumulators: STS 3.5.1 requires that with one accumulator inoperable due to reasons other than boron concentration outside the required limits, the accumulator must be returned to operable status within one hour. In this condition, the required content of three accumulators cannot be assumed to reach the core during a LOCA. Due to the severity of the consequences should a LOCA occur in this condition, the one-hour CT ensures that prompt action will be taken to return the operable accumulator to operable status. Furthermore, Action D requires that if two or more accumulators inoperable, LCO 3.0.3 must be entered immediately since the plant is in an condition outside the accident analysis. The proposed TS 3.5.1 (Action a) allows one or more accumulators inoperable up to 24 hours, or to the RICT for restoration. The use of RICT for more than one accumulator inoperable is not consistent with either the current STP TS or the STS.
  
- d. STP TS 3.5.2 (Action b) - ECCS in MODES 1, 2 and 3: STS 3.5.2 requires that for a condition where the ECCS flow is less than 100 % of the required ECCS flow assumed in the LOCA analysis, the plant must enter into LCO 3.0.3 immediately because the plant is in a condition outside the accident analysis. Action b of the proposed TS 3.5.2 allows less than two of the required ECCS subsystems to be operable for up to 6 hours or to the RICT to restore operability. Allowing up to the RICT to restore operability of at least two of the required ECCS subsystems is not consistent with either the current STP TS or the STS. To be consistent with TS 3.5.2, Action b should be changed so that for the ECCS flow less than that assumed in the LOCA analysis, the plant must be brought into LCO 3.0.3 immediately.