

# RMTS RMG NRC Review Comment Resolution Responses

12/16/2003

Comment Number	Comment Source	Comment Text	Supplementary Comment Text 1	Supplementary Comment Text 2	Supplementary Comment Text 3	Proposed Comment Resolution/Response
1	NRC	The document contains misspelled words. The treatment of acronyms is inconsistent; some acronyms are never defined others are defined after being used several times, and others are frequently defined. Punctuation needs improvement. The use of "i.e." and "e.g.," is not always correct and could cause confusion, especially in a guidance document meant to be followed by implementers throughout the nuclear power industry.				We concur. We have reviewed the document and corrected these issues to the best of our ability.
2	NRC	The implementation of the proposed RMTS approach needs to be justified in accordance with guidance provided in RG 1.177 and RG 1.174. Will the implementation of the proposed RMTS approach meet the guidance stated in these two regulatory guides? If the answer is yes, please discuss how such guidance will be met.				The RMTS program guidance is designed to be consistent with NEI 93-01 (Revision 3) maintenance rule guidance and with RG 1.174. Text has been added to the report to describe the RMTS guidance relationship to NEI-93-01, RG 1.174, RG 1.177, and RG 1.182.
3	NRC	The topical report documenting the risk management guide was prepared by EPRI and CEOG for NEI. It needs to be clearly stated that the report is proposed for both CE and non-CE reactors. [page 1]				We concur, and we have added text to resolve this comment.
4	NRC	Presently the TS requirements are relatively easy to inspect. Unless the requirements for RMTS are clearly stated in the TS, the inspectors may have a difficult time verifying the implementation of flexible completion times. The TS should state that "the licensee's risk assessment and risk management actions must be in accordance with [Risk Management Guide, ---]." How does the RITSTF see the proposed risk management approach fitting into the regulatory framework and regulatory process?				This guide promulgates a general technical framework for RMTS programs and is not intended to be a prescriptive procedure or regulatory document. We anticipate that the licensees intending to implement RMTS programs will address prescriptive actions in their respective RMTS program request submittals to the NRC. Also, there are RMTS pilot programs under current development. The results of these pilot programs will be used to aid in addressing the issues raised by this comment.
5	NRC	Recommend that the guide be revised to address maintenance of equipment during: high demand months, bad weather, when electric demand is high, and other times of external vulnerability, such as plant vulnerabilities to terrorist attack.				To the extent that these issues are modeled in a plant-specific PRA, these will be addressed via the process in the guide. However, terrorist risk is, and will remain, outside the scope of the typical PRA unless and until specific initiating event definitions and frequencies can be supplied by the regulator or other competent authority. Intentional acts of sabotage and terrorism are outside the scope of the CRMP/PRA, and are therefore outside the scope of an RMTS program.
6	NRC	[pages 4, 5, 11, 26] Use of figures needs work. The static nature of figure 3-1 does not capture the dynamic nature of emergent conditions. For example, what happens when an emergent condition creates a configuration that is outside the modeling capability of the PRA so that calculation of a RICT is not possible? The discussion of determining a RICT under Process Description is hard to follow and could benefit from use of a diagram.				Text has been added to the report to make it clear that, if a RICT assessment is not possible for a particular maintenance configuration, then the front-stop CT will apply. Also, Figure 3-1 has been refined.

ENCLOSURE 5

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7	NRC	Page 11 flow chart: i. first stop "RICT not required" - should it also read "not permitted"?; ii. who determines what makes a "qualified staff" to perform a RICT?; iii. "monitor configuration risk factors" - what is the frequency of this?				Figure 3-1 has been refined. Monitoring of configuration risk factors is continuous during the RICT time period.
8	NRC	On page 17 and 18, it is stated: "It is important to note that a RMTS program should not permit intentional, simultaneous disabling of all trains of any key safety function." This sentence needs clarification. The sentence should state "It is important to note that a RMTS program SHALL not permit intentional, simultaneous disabling of all trains of any key safety system" and define a "key" safety system. Loss of function for key systems should be addressed outside this initiative.				As previously stated, this guide provides a general technical framework for RMTS program development and implementation, not prescriptive or regulatory requirements.
9	NRC	Terms need to be better defined and explained; "functional" vs. "operable", "degree of residual capability", "intended" vs. "specified", "restored to service", "key safety function", "RMTS tool" vs. "quantitative risk assessment tool", etc.				The guide text and glossary has been refined.
10	NRC	A clear definition should be provided in Appendix A for the terms "front-stop" and "back-stop."				We concur. These definitions have been added to Appendix A.
11	NRC	Page 18 - item 2 of section 3.4.2 states "...to shutdown and maintain the reactor in a safe shutdown condition...." Define the "safe shutdown condition" and show its relationship with LCO 3.0.3 of the STS, related to the shutdown end states. Discuss the interrelationship of this initiative with initiative 6 on modifying TS 3.0.3.				We concur. This definition has been added to Appendix A.
12	NRC	Review the entire document to ensure that when a given direction is imperative, it utilizes an appropriate word, such as, "shall."				As previously stated, this guide provides a general technical framework for RMTS program development and implementation, not prescriptive or regulatory requirements.
13	NRC	In some places it says "fire, seismic, and or flood" (p.8); "fire, floods, and external flooding" (p.22). Other places it says "external events" should be considered, which I would include hurricanes, tornados, local events (e.g., fire at near-by plant). Others places just says "initiating events" without calling out external events (p.12). Please re-check document to be consistent or are events limited to just the listed events?				We have revised the document to clarify treatment of external events within a RMTS program.
14	NRC	Pages 14/15 add bullet to include "industry experience"				We concur. Appropriate text has been added to the report.
15	NRC	Page 32 2nd paragraph states that "...Additional discussion on these features is presented in Section 5.3." Section 5.3 is missing.				We concur. Appropriate revisions have been made to the report.
16	NRC	Page 3: a. What is the implication of, "The RMTS . . . will not change the manner in which plant design parameters are controlled.?"				This means that RMTS are not intended to change plant safety limits or limiting safety system settings described in the conventional plant technical specifications.
17	NRC	Page 4: a. How is risk "justified"? b. How is "Guidance for continuing maintenance beyond the CT" tracked; recommend rewording sentence to make clear that it is the continuing maintenance beyond the CT that is tracked and not the guidance?				We concur. Appropriate revisions have been made to the report.

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18	NRC	Page 5: a. How do you "enter a front-stop CT"; recommend clarifying sentence to explicitly state that it is the LCO Condition and Required Actions that are being entered? b. What does this mean: "Note at intermediate risk levels plant actions will escalate to be commensurate with the projected risk."? c. The rest of Section 2 appears to be leftover paragraphs that had been written but found no acceptable home in the document; coherence is needed. d. Note that the NRC has never endorsed Reference 3, which is revision 3 of NEI's guidance for implementation of the maintenance rule. NRC has endorsed revision 2 of NUMARC 93-01 plus a revised Section 11 dated February 22, 2000. Comment also applies to page 33.				We have added the following clarifications for these comment issues: a. This is the clock start time for the conventional TS AOT/CT. b. "Note that, during the time a RICT is in effect, plant actions ..." c. Appropriate revisions have been implemented in the report. d. We are intentionally referencing NEI 93-01, Revision 3.
19	NRC	Page 6: a. How do you "assess and manage the risk impact incurred from plant configuration risk management"? b. It appears that what is being said is that "the (a)(4) process involves a greater reliance on PRA methods and insights in establishing and planning maintenance activities" than implementation of the RMTS will require; when what is meant is the inverse; recommend rewording.				Appropriate revisions have been made to the report to clarify these issues.
20	NRC	Page 7: a. What is an "RMTS tool"? b. What is the meaning of, "The assessment then requires . . . performance of a risk assessment . . . ."? Recommend rewording for clarity.				Appropriate revisions have been made to the report to clarify these issues.
21	NRC	Page 8: a. In (2) .. How do you perform a "risk assessment of the inoperability"? Clarify. b. In (2) .. Same sentence .. That is done to "justify continued power operation beyond the front-stop." Suggest adding the "determination of the feasibility of continued power operation etc."? c. In (3) the word "manage" is misspelled and a comma is missing after "manage risk". d. In (4) .. The time line seems reversed: AFTER entering the extended CT, THEN re-perform the risk assessment? e. The first three sentences of the paragraph beginning at the bottom of the page need clarity.				Appropriate revisions have been made to the report to clarify these issues.
22	NRC	Page 9: a. Agree that the risk assessment "shall" be documented. b. How will be the risk assessment be documented and what will be in the documentation?				In many places where the report previously stated an action "should" be performed, we have changed "should" to "must." However, we reiterate that this report is a technical framework document only, and it is not intended to be prescriptive or regulatory in nature. Specific documentation guidance will be addressed via the RMTS pilot projects and via subsequent plant-specific RMTS program request submittals.
23	NRC	Figure 3-1:a. 3rd box text is incomplete. b. SIGNIFICANT ISSUE: How are "Qualified Staff" selected/determined/etc. This is a significant issue with respect to all uses of risk assessment. c. How do you "perform" an "RICT"? d. Next oval .. Who is qualified to "review and approve RICT assessment"? e. Time line. Is it appropriate to "implement configuration" before "establish risk management actions"? f. Next oval .. What are the risk factors to be monitored? g. The "Yes" words on the decision branches are illegible.				We have addressed these issues in the report as follows: a. None of the box text is incomplete, it just was blocked from view. We have fixed the font/format. b. This should be specified in individual RMTS submittals. c. RICT assessment. d. Plant-specific RMTS submittals. e. Reversed box order. f. "Changes in configuration or component operability status." g. Re-formatted figure.

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24	NRC	Page 13: a. In 9 .. Define "promptly" as in "promptly restored to service". Comment also applies to page 28. b. UNACCEPTABLE: "in these cases, the assessment may consider the time necessary for restoration of the SSC's function, with respect to the time at which performance of the function would be needed." This issue caused major problems in maintenance rule space. However, the technical specifications were always considered a safety net or backstop to the application of this logic. It now appears that the RMTS program is removing that safety net to the benefit of the plant operators and to the potential detriment of safety. c. In 10 .. "Procedural guidance should be provided to specify the appropriate completion time for reassessing the risk." To be provided when and by whom?				The term "promptly" has been clarified in the report. A 24-hour RICT re-calculation time has been applied as an example, but this time has been clarified in the report.
25	NRC	Page 14: a. What are "equipment maintenance configurations"? Clarify. b. Next sentence .. What does this mean: "... SSCs that have or could have front-stop CT requirements imposed . . ." (emphasis added)				We have added appropriate definitions and clarifying text to the report. These SSCs are those addressed in TS LCOs.
26	NRC	Page 15: a. Second bullet .. How are the dependencies modeled to ensure adequacy the assessment? b. Fifth bullet .. If the process is available, should it not also be used?				The second bullet was deleted by EPRI and the fifth bullet was clarified in the report.
27	NRC	Page 18: a. There are no maintenance rule "requirements to establish and meet SSC performance criteria." Such aspects of implementing the rule come from NEI guidance and are not required by the rule. b. How can one observe "actual temporary risk impacts"? c. The statement that "Risk management can be effectively accomplished by using qualitative insights from the PRA" is not always true.				We now refer to NEI 93-01, Revision 3 guidance consistently. Clarifying text was added to the report.
28	NRC	Page 19: The statement that "Qualitative methods to establish risk management actions would generally be necessary to address SSCs not modeled in the PRA, and for shutdown conditions." May better be modified to acknowledge that many licensees have PRAs that function for shutdown conditions.				We concur. Clarifying text was added to the report.
29	NRC	Page 20: a. The phrase, "which events cause the risk level," needs to be clarified. b. The parenthetical phrase, "i.e., in a weekly maintenance plan," indicates that the only way maintenance can be "intentionally and deliberately pre-scheduled" is through such a "weekly maintenance plan." True?				The report has been reworded to address these issues.
30	NRC	Page 21: a. The erroneous statement is made that, "The quantitative risk acceptance guidelines presented in Table 3-2 are consistent with NRC Maintenance Rule (a)(4) guidance." Quite different.	Table 3-2	Table 3-2	NUMARC 93-01	Table 3-2 was substantially revised to be consistent with NEI 93-01, Revision 3 guidance.
31	NRC	Page 21: a. The erroneous statement is made that, "The quantitative risk acceptance guidelines presented in Table 3-2 are consistent with NRC Maintenance Rule (a)(4) guidance." Quite different.	(Risk Acceptance Guidelines)	(Risk management actions)		Table 3-2 was substantially revised to be consistent with NEI 93-01, Revision 3 guidance.
32	NRC	Page 21: a. The erroneous statement is made that, "The quantitative risk acceptance guidelines presented in Table 3-2 are consistent with NRC Maintenance Rule (a)(4) guidance." Quite different.	>10-3/r	Config risk not voluntarily entered	Careful consideration before ent	Table 3-2 was substantially revised to be consistent with NEI 93-01, Revision 3 guidance.

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33	NRC	Page 21: a. The erroneous statement is made that, "The quantitative risk acceptance guidelines presented in Table 3-2 are consistent with NRC Maintenance Rule (a)(4) guidance." Quite different.	>10-5	C.R. not voluntarily maintained	Config should not normally be e	Table 3-2 was substantially revised to be consistent with NEI 93-01, Revision 3 guidance.
34	NRC	Page 21: a. The erroneous statement is made that, "The quantitative risk acceptance guidelines presented in Table 3-2 are consistent with NRC Maintenance Rule (a)(4) guidance." Quite different.	>10-6	(words make no sense*)	Take risk mgmt actions	Table 3-2 was substantially revised to be consistent with NEI 93-01, Revision 3 guidance.
35	NRC	Page 21: a. The erroneous statement is made that, "The quantitative risk acceptance guidelines presented in Table 3-2 are consistent with NRC Maintenance Rule (a)(4) guidance." Quite different.	<10-6	(words make no sense*)	Normal work controls	Table 3-2 was substantially revised to be consistent with NEI 93-01, Revision 3 guidance.
36	NRC	Page 21: a. The erroneous statement is made that, "The quantitative risk acceptance guidelines presented in Table 3-2 are consistent with NRC Maintenance Rule (a)(4) guidance." Quite different.	* How can "risk" be greater than "time"???			Table 3-2 was substantially revised to be consistent with NEI 93-01, Revision 3 guidance.
37	NRC	Page 23: a. What is the meaning of "RMTS thresholds"? b. On this page it is stated, "Risk management actions should be considered for plant configurations whose instantaneous and cumulative risk measures are predicted to approach or exceed RMTS thresholds." It sounds unacceptable; clarify. Compare with Page 24, where it says: "Controlled plant shutdown should be considered for plant configurations whose instantaneous and cumulative risk measures are predicted to exceed RMTS thresholds." Which sounds contradictory.				a. See Table 3-2. These statements are not contradictory. If risk management actions (up to and including plant shutdown) are applied prior to the end of the front-stop CT, then the predicted risk measures will improve (i.e., decrease). Controlled plant shutdown is a risk management action.
38	NRC	Figure 3-2: a. Define when "operating risk" is "unacceptably high." b. Define when "projected integrated risk to complete" is "acceptable." c. Define criteria in determination of "SD risk compensate benefit for increased operational risk?" [Explain the figure.]				Figure 3-2 has been deleted and replaced by a revised discussion in the report text.
39	NRC	Page 27: a. In 3.6.1 ... The last sentence is misleading. No (a)(4) assessment is required at the time of establishing the compensatory measure, but one IS required before performing the maintenance to address the degraded or nonconforming condition. b. In 3.7.2 .. Last line .. "shall" or "must" vice "should."				a. We concur. The report text has been revised to address this issue. b. In many places where the report previously stated an action "should" be performed, we have changed "should" to "must." However, we reiterate that this report is a technical framework document only, and it is not intended to be prescriptive or regulatory in nature. Specific documentation guidance will be addressed via the RMTS pilot projects and via subsequent plant-specific RMTS program request submittals.
40	NRC	Page 38: The definitions of "functional" and the phrase "as modeled in the plant-specific PRA" need to be clarified.				Revised the report.
41	NRC	Page 40: The definition of operable is almost the same as the NRC/TS definition; the word "and" has been replaced with "or" in two places; why?				We have taken this definition directly from standard TS references (e.g., the Westinghouse STS).

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42	NRC	Page 43: a. As a matter of record, the pre-1999 versions of the maintenance rule DID NOT require licensees to assess and manage risk, as the rule does today. b. The statement that "This rule requires that a "risk assessment" be performed prior to voluntary entry into a maintenance configuration . . ." is erroneous. The rule requires a risk assessment before performing maintenance activities, regardless of configuration or whether equipment will be taken out of service. c. Once again, the "guidance for satisfying the requirements of this rule provision is defined in Section 11 of NUMARC 93-01 (Reference 3) and has been endorsed by the NRC . . ." Note: the NRC has not endorsed Reference 3.				a. Comment noted. b. The report has been revised to accommodate these revisions. c. Reference 3 (NUMARC 93-0,1 Revision 3) is a foundational reference for this guide. Revision 3 merely incorporates the revised Section 11 endorsed by NRC in Reg Guide 1.182, and contains no other changes from Revision 2.
43	NRC	[pages 4, 8, 10, 13, Table 3-1] Times for performing risk assessments need a rational basis. Why 24 hours for emergent conditions; why not 6 hours or less; why not minutes? How is [6] hour "re-assessment" time limit implemented? Why 30 days for the backstop time; what precludes a NOED at that point?				The 24-hour limit is applied as an example in this guide, but the guide now states that specific "re-assessment" or RICT "re-calculation" time will be required to be within the associated relevant front-stop CT for the maintenance configuration of interest.
44	NRC	Page 5 - 3 <sup>rd</sup> paragraph discusses the recalculation of the RICT for a changes maintenance configuration. An example of 24 hours is used as acceptable time to complete the RICT recalculation. Provide the basis for the acceptable required time to complete the RICT recalculation and address the risk significance of the duration of the recalculation time during which the original target RICT is exceeded.				The 24-hour limit is applied as an example in this guide, but the guide now states that specific "re-assessment" or RICT "re-calculation" time will be required to be within the associated relevant front-stop CT for the maintenance configuration of interest.
45	NRC	On page 10, Table 3-1 third column, it is stated that licensees will verify that the completion time extension is acceptable "in accordance with the RMTS Program (i.e., within 24 hours of a subsequent configuration change." This statements needs to be revised to distinguish between voluntary and involuntary (emergent) configuration changes. For voluntary configuration changes, the acceptability of the extension (or continued extension) should be verified before entering the new configuration. For emergent configuration changes, such acceptability should be verified expeditiously (e.g., within one hour) to ensure that it is safe to operate the plant at the current configuration until a more detailed risk assessment is performed. A longer period (e.g., 24-hours) can be allowed to perform and document a more detailed risk assessment.				The 24-hour limit is applied as an example in this guide, but the guide now states that specific "re-assessment" or RICT "re-calculation" time will be required to be within the associated relevant front-stop CT for the maintenance configuration of interest.
46	NRC	The staff feels that 30-day completion time is a very long time for an equipment to be inoperable. The guide should provide the basis for establishing a maximum of 30-day completion time. The staff believes that most of the maintenance and repairs on the safety equipment can be accomplished within 14 days ( based on industry experience a complete overhaul of a diesel generator can be accomplished within 14 days). Consideration need be given to restoring compliance with such GDCs as 17, 34, and 35, and to single failure criteria as soon as practical when determining the appropriate completion time.				The 30 day backstop is intended to restore compliance with design basis considerations in a reasonable time for situations where risk metrics would allow longer periods of inoperability. As a point of reference, temporary plant modifications performed to permit maintenance activities are excluded from 10 CFR 50.59 review for a period of 90 days, providing they have been assessed under 10 CFR 50.65(a)(4).

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47	NRC	The staff feels that the unavailability of the safety equipment would increase with the proposed completion time of 30 days. How would this increase in unavailability satisfy the requirements of maintenance rule regarding minimizing unavailability of safety systems.				The intent of the 30 day backstop, and the whole RMTS concept is NOT to increase unavailability of safety systems. Increased unavailability of safety systems is precluded by many measures, including 1) The existing provisions of the maintenance rule to balance unavailability and unreliability based on PRA insights, which would not be affected; 2) The requirement in RMTS for consideration of aggregate risk impacts, and meeting Reg Guide 1.174 risk metric guidelines for permanent CLB changes; 3) Existing performance indicators based on safety system unavailability.
48	NRC	Has any consideration been given to Nuclear Power Plant security, in light of the recommended long completion times? Shouldn't the guide provide guidance on what measures the licensees should take in order to protect the plant equipment during this period?				Security risk cannot practically be addressed in the context of RMTS. In times of elevated security conditions, security programs will specify controls as necessary. These programs are typically controlled under safeguards requirements and cannot be incorporated into Tech Specs.
49	NRC	On page 28, Testing, it is stated that "SSCs out of service for testing are considered unavailable, unless the test configuration is automatically overridden by a valid starting signal, or the function can be promptly restored..." The guide should define "promptly," such as "within 5 minutes". It is not clear what promptly means here.				The report text has been revised to define what we mean by "prompt" and "promptly."
50	NRC	[page 15] Existing completion time (front-stop time) provided in the TS may not be conservative for certain plant configuration (maintenance activities on multiple SSCs). Table 3-1 suggests that the licensees have to verify only the time beyond the front-stop completion times. The licensees have to do a risk assessment for the configuration they are in to validate the completion time. The approach of this process seems to be based on the assumption that all completion times specified in the existing technical specifications are conservative.				Existing maintenance rule (a)(4) requirements would still apply to the front stop period, and these could result in risk management actions up to and including plant shutdown, as they do today. Current tech specs also create the possibility to create higher risk impacts due to simultaneous LCO entries, and this was the rationale for the development of (a)(4). The existing front stop values are preserved for the purpose of operator familiarity, work planning, and maintaining the general existing approach of tech specs.

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51	NRC	[pages 13, 14] PRA Quality considerations need to be defined; depth/rigor "commensurate with complexity of plant configuration"; qualitative vs. quantitative vs. blended risk assessment requirements need to be explicit. Shouldn't level 3 ASME PRA standards be required for technical specification work rather than level 2? What is more important than operational safety?				PRA technical capability would be commensurate with NRC guidance of draft Regulatory Guide DG-1122. This would require, as a minimum, an ASME capability level 2 internal events at power PRA for CDF and LERF. It is not expected that ASME Capability level 3 would be required for PRA technical elements in support of this application. ASME capability level 3 requirements generally represent methods that go beyond existing practice for PRAs, and are intended to support risk based applications. The RMTS uses a risk informed approach through application of conservative guidelines for risk management actions, use of backstops, and other measures.
52	NRC	Page 4 - 2 <sup>nd</sup> paragraph states that "...The assessment should be performed...and supported by a plant...(PRA) and other risk management tools..." Provide examples to illustrate what are the "other risk management tools" that may be used, and address their acceptability for use in risk assessment to support the risk management guide discussed in the topical report.				The report text has been revised to give examples and discuss acceptability.
53	NRC	How will TS on systems that do not contribute to CDF or LERF be addressed; will this process apply (e.g., SFP)?				RICT values cannot be calculated for such systems and associated SSCs unless and until they are added to the scope of the PRA in some form, so they would, in general, not be within the scope of the RMTS. In other words, such systems would remain under the control of current TS LCOs.
54	NRC	Page 14 - Last paragraph states "... The PRA should meet ...industry standards...(See References)...." Where applicable, list the documents or letters by which the NRC either endorses or accepts the cited references in support of an acceptable plant PRA for use in the risk management guide.				See answer to number 50 above
55	NRC	Page 22 mentions "plants without external events PRAs," how broad of a spectrum are we allowing in term of quality or completeness of PRA to apply the RMTS?				That will vary depending upon the RMTS-implementing plant and the scope of its SSCs addressed in its CRMP/PRA. This must be addressed in individual plant RMTS program request submittals. This guide supports the full spectrum of potential RMTS scopes for specific plants.
56	NRC	Page 22 states that "plants must appropriately consider the issue of uncertainty" - who determines appropriateness? What guides are available to ensure industry uniformity?				The ASME PRA Standard (ASME RA-S-2002) and the EPRI PSA Applications Guide (EPRI TR-105396) address this issue. Also, NRC Regulatory Guide 1.174 presents some related guidance.



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57	NRC	[pages 4, 8] How does risk assessment of (a)(4) differ from risk assessment of "inoperability"/for determining appropriate CT? Says the assessment process will be "three tiered" but the tiers are not discussed. Guidance needs to be more detailed and explicit.				The RMTS risk assessment process does not differ materially from the associated process for 10CFR50.65 (a)(4), except that the focus in the RMTS is on determination of an acceptable RICT, and there is more emphasis on "pre-screening" of maintenance configuration risk in an RMTS program. We have eliminated reference to the "three-tiered" approach in the report, but this has always referred to the three proposed RMTS CT levels: front-stop CT; RICT; and back-stop CT (30 days).
58	NRC	[page 7] Is there a limit to the number of changes allowed in a given period of time, such that a qualitative understanding of the risk is known?				No. We see no need for this limit as long as we can calculate a valid RICT. Otherwise, we will always default to the associated front-stop CT. We recommend consistency with maintenance rule (a)(4) guidance here.
59	NRC	[pages 15, 16] It is not evident what decisions or actions the quantitative and qualitative considerations discussed refer to or how they relate logically (to the unspecified action or decision). What acceptance criteria will the results of these considerations be tested against? Qualitative Consideration 1 and 3 seem to be redundant since they both address impact on "key safety functions."				The report has been clarified regarding this issue. We now clearly state that qualitative analysis supports the quantitative analysis required for RICT calculation. The acceptance criteria are clearly stated in Table 3-2.
60	NRC	page 21] The staff fully supports and expects that RMTS Quantitative Risk Acceptance Guidelines will be implemented that include both instantaneous and cumulative performance indicators, and used to assess risk management as an element of a unit's annual NRC assessment.				We interpret this to mean that we are in agreement with the NRC here. Table 3-2 lists both instantaneous and cumulative risk metrics for maintenance configuration safety management.
61	NRC	[pages 5, 19, Figure 3-2] Why are acceptance guidelines of RG 1.177/1.174 not used? They seem entirely appropriate for this TS application. For example, RG 1.177 acceptance guidelines for a completion time change are an ICCDP of less than 5.0E-7 and an ICLERP of 5.0E-8 or less, are apparently not considered.				As previously stated, this guide is based primarily on NUMARC 93-01, Revision 3 guidance, and not directly on RG 1.177. However, RG 1.177 is applied in some RMTS programs for selected equipment LCO front-stop CT determination, and the general guidance from RG 1.174 is applied in concert with NUMARC 93-01, Revision 3.
62	NRC	Page 20 -Item 2 states that "[quantitative risk acceptance guidelines...are presented in Table 3.2...." Discuss the acceptability of the proposed acceptance risk guidelines in Table 3.2 for use in the RMST risk analysis.				As previously stated, this guide is based primarily on NUMARC 93-01, Revision 3 guidance. We believe the acceptance criteria presented in Table 3-2 are consistent with the Maintenance Rule guidance and represent general good practice.

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63	NRC	<p>On page 18, it is stated: <i>"Plants that implement RMTS should develop measures to assess the aggregate risk with respect to its estimated impact on the average baseline risk. This could be accomplished through a periodic assessment of previous out-of-service conditions. Such an assessment may involve quantitatively estimating cumulative risks or may involve a qualitatively assessing the risk management approach employed versus the actual temporary risk impacts observed."</i> The staff believes that guidance is needed on developing and using "measures to assess the aggregate risk with respect to its estimated impact on the average baseline risk" based on RG 1.174 criteria. Also, clarification is needed on how "a qualitative assessment of the risk management approach versus the actual temporary risk impacts" can be used to ensure that the plant's baseline risk will not increase by the implementation of the proposed RMTS program.</p>				<p>We have revised the report to clarify that qualitative analysis supports the quantitative analysis required for RICT calculation. Also, we have referred to NUMARC 93-01(Revision 3), RG 1.174, and EPRI TR-105398 for aggregate risk management guidance. Individual plants will be required to address aggregate risk management in their plant-specific RMTS program request submittals to the NRC. It is anticipated that many of the details regarding aggregate risk management within a RMTS program will be addressed via the pilot plant examples currently under development.</p>
64	NRC	<p>On page 7, it is stated: <i>"In performing the RMTS assessment, the decision making process may optionally include consideration of transition risks associated with mode changes."</i> Does this statement imply a quantitative consideration? The staff believes that for a quantitative consideration of "transition" risks, licensees will need appropriate models to ensure that the credit taken for avoiding transition risks (by continued operation at power) is not overestimated.</p>				<p>Yes. We generally agree with the staff here. Plants addressing issues of transition risk in their RMTS programs will be expected to perform adequate conservative bounding calculations to support RICT determination, or they will alternatively be expected to apply transition risk models in the RICT determination process.</p>
65	NRC	<p>On pages 6 and 7, items 1 to 4, several attributes that the RMTS process should have (in addition to MR (a)(4) attributes) are listed. These attributes relate to the development of procedures and guidance for implementing the RMTS process. For example, it states that the RMTS process shall <i>"... Be documented in plant procedures delineating appropriate responsibilities for (a)(4) related actions,"</i> and <i>"Include guidance for using risk insights to manage overall plant risk."</i> Are these "attributes" explained in the RMTS Risk Management Guide? Who is going to develop such procedures and guidance?</p>				<p>No. The individual plants will develop these procedures and guidance in support of their plant-specific requested RMTS program submittals to the NRC.</p>

## RMTS RMG NRC Review Comment Resolution Responses

12/15/2003

Comment Number	Comment Source	Comment Text	Supplementary Comment Text 1	Supplementary Comment Text 2	Supplementary Comment Text 3	Proposed Comment Resolution/Response
66	NRC	On page 5, it is stated: "Consistent with the maintenance rule a target RMTS configuration risk would be a configuration ICDP of 1E-6 (as measured from entry into the RMTS). For emergent conditions (or forced, unplanned extension of planned maintenance) a maximum RICT equivalent to an ICDP of 1E-5 is identified." It is not clear why an ICDP of 1E-6, measured from entry into the RMTS, is consistent with the maintenance rule. It appears that if the ICDP were measured from the time the component is taken out for maintenance, the ICDP could be significantly above the 1E-6 target for "normal work controls." Also, the exact meaning of the statement "forced, unplanned extension of planned maintenance" needs to be clarified. Is the underestimation of the time needed to perform maintenance on certain systems included in this statement? It appears that only one such case per year is likely to cause a significant increase in the plant's baseline risk. What would prevent licensees to use all allowed CT (front-stop), overestimate the maintenance they can perform within the RICT, and then use the "forced, unplanned ex				The report has been revised to refer to "maintenance rule guidance" (NUMARC 93-01, Revision 3), and Table 3-2 has been revised appropriately. There are no longer separate criteria for emergent and planned maintenance.
67	NRC	On page 15 it is stated: "Removal of a single SSC from service for longer than its front-stop CT, or simultaneous removal from service of multiple SSCs for longer than the resulting most limiting front-stop CT, requires an assessment using blended ... methods." Does the phrase "simultaneous removal from service of multiple SSCs for longer than the resulting most limiting front-stop CT" imply use of (a)(4)? An investigation may be needed to determine whether there are any interface issues between (a)(4) and RMTS program applied before and after the CT extension, respectively.				The RMTS program guidance provided in this report is intended to be completely consistent with NUMARC 93-01, Revision 3 guidance for 10CFR50.65(a)(4). The report has been revised to clarify this issue.
68	NRC	Explain why the required PRA levels are different for the cases discussed in the following statements. Clarify any inconsistencies as necessary.	- page 6 - 3 <sup>rd</sup> paragraph states that "...The scope of the maintenance rule includes SSCs from plant Level 1 PRA...."			The report has been revised to be more consistent on these issues, but we emphasize that this is a general guidance document, not a regulatory requirements document. Plants implementing RMTS programs will need to address the application and scope of their plant-specific PRAs and CRMPs in their individual request submittals to the NRC.
69	NRC	Explain why the required PRA levels are different for the cases discussed in the following statements. Clarify any inconsistencies as necessary.	- page 6 - 3 <sup>rd</sup> paragraph states that "...For emergent (unplanned) conditions, ... PRA results should be based on PRAs with minimum Levels 1 and 2 attributes...."			The report has been revised to be more consistent on these issues, but we emphasize that this is a general guidance document, not a regulatory requirements document. Plants implementing RMTS programs will need to address the application and scope of their plant-specific PRAs and CRMPs in their individual request submittals to the NRC.
70	NRC	Explain why the required PRA levels are different for the cases discussed in the following statements. Clarify any inconsistencies as necessary.	- page 30 - 2 <sup>nd</sup> paragraph states that "...Ideally, this supporting PRA is a full scope Level 2 or 3 PRA...."			The report has been revised to be more consistent on these issues, but we emphasize that this is a general guidance document, not a regulatory requirements document. Plants implementing RMTS programs will need to address the application and scope of their plant-specific PRAs and CRMPs in their individual request submittals to the NRC.
71	NRC	Page 13 #10 - are all PRA performed prior to action except emergent conditions? Risk assessment guidance for emergent condition should be consistent with (a)(4) guidance?				Yes, we agree, and we feel that we have made this clear in the current report text.
72	NRC	Pages 14/15 - what about updates to information, including industry experience? At what frequency should they be updated?				Guidance for inclusion of industry experience has been added to the report text.

## RMTS RMG NRC Review Comment Resolution Responses

12/18/2003

Comment Number	Comment Source	Comment Text	Supplementary Comment Text 1	Supplementary Comment Text 2	Supplementary Comment Text 3	Proposed Comment Resolution/Response
73	NRC	assessment and/or risk management actions to justify an extension of a completion time or validate an existing completion time shall be documented.				Although this is a general industry guidance document, and not a regulatory requirements document, we have revised many of the "should" statements to now read "must" or "will."
74	NRC	The guidance document should specify the SSCs that must be considered for the risk assessment. This should also be addressed in TS bases. The existing guidance states that "...the risk informed assessment scope may be limited to the following scope...."				Although this is a general industry guidance document, and not a regulatory requirements document, we have revised many of the "should" statements to now read "must" or "will."
75	NRC	In general, configuration risk is now controlled to a large degree by fixed allowed outage times in current STS, and NRC review and approval of any proposed temporary extensions to completion times. Under the approach proposed in the Risk Management Guide, configuration risk would be controlled to a large degree by the licensee's risk management practices. Will guidance be provided on how licensees can monitor and report the overall change in plant risk associated with extending outage times under a RMTS 4b program to ensure that any increase is acceptably small? If so, what quantitative and qualitative criteria will be used to determine the acceptability of the licensee's performance in implementing risk management? If not, why not?				Yes, Table 3-2 clearly presents these criteria for an RMTS program. Also, we have recommended application of RG 1.174 and EPRI TR-105396 in monitoring and managing aggregate risk. Plant-specific RMTS program request submittals will address these issues in greater detail relative to their respective CRMPs and PRA's.