NRC Response and Additional Questions/Comments on NEI RMTS Guide
August 2005 Draft
RMTS Initiative 4B

1. NRC comment #1 requested discussion of common cause failures (CCFs). In response, a new section 3.5.2.4 has been added to the current draft guidelines. The staff believes that, for emergent failures of components which are part of a CCF group, the RICT calculation must be structured to account for the potential increased probability of a CCF of the remaining components, when the status of those components with regards to the potential CCF is not able to be positively determined. Further, the calculation requirements should be generic, and not plant-specific. The staff requests additional clarifications as to what requirements are being implemented for CCF by this new section:

   a. The guidelines state that "it is anticipated" that the PRA supporting RMTS "will incorporate a relatively robust treatment of CCF", continuing that "RICTs calculated by these PRAs automatically incorporate conditional probabilities of common cause component group failures." Is this equivalent to the RICT determination discussed in the second paragraph of this section, which states "a RICT may be determined via the PRA by setting the remaining common cause group train composite failure probability to be equal to its global conditional probability of failure"? Please discuss exactly what revised CCF calculation is intended; discuss what is being automatically accomplished; specific examples may be helpful to the staff's understanding.

   b. The guidelines identify the situation where CCF has been determined to exist, and states that expeditious action under "conventional" TS 3.0.3 is required, and "in virtually all cases for most plants, the operators will determine if a component failure model could exist in other functional trains of the same systems. This activity is performed prior to any RICT being calculated or implemented". However, one of the pilot plants is proposing to apply a RICT for such redundant failures which currently require TS 3.0.3. Please clarify the interface between CCFs, TS 3.0.3, and the RMTS RICT calculations.

   c. When a single failure of a component in a CCF group has occurred, the guidelines state "In these cases, the RICT can be calculated by applying the independent failure probability of the SSC discovered to failed." It is not clear to what case the guidelines refer. It may be appropriate to identify the various cases when a single failure occurs (i.e., redundant components known to be similarly impacted, known not to be impacted, unknown state, etc.) and identify exactly what CCF calculation would apply.

   d. For the case where one component of a common cause group SSC fails, the guidelines state "…the RICT may be optionally calculated by applying a PRA SSC model alignment that considers emergently-failed equipment out of service. This will automatically incorporate CCF for the remaining trains…" The guidelines refer to "modified CCF logic". Please discuss exactly what calculations (modified logic) are being required by this discussion for emergent failures. Please also clarify what is required by "automatically incorporate CCF for the remaining trains", which would seem to be an unnecessary restriction for automation in the risk assessment tool.

   e. At the end of this section, the guidelines require only a plant-specific process for incorporating CCF consideration into the RICT calculations, to be described in individual submittals. The staff believes that although the method of exercising the PRA model to perform the CCF calculations may be unique to a plant, the requirements for the content of the CCF adjustments should be generic and explicitly described.

3. NRC comment #3 requested guidance on addressing uncertainties. In response, the guidelines effectively state (page 3-17) that meeting the uncertainty requirements of Regulatory Guide 1.200 justifies the use of PRA-calculated mean values for determination of RICTs. The staff believes that the implementation guidance should provide a clear structured process for assessing and addressing, as necessary, uncertainties in the PRA model. Such a process could be an a priori evaluation of uncertainty for each system for which the RMTS may be applied to define RMAs or other restrictions on the use of the RICT, or to justify the unrestricted application of the calculated RICT.

5. NRC comment #5 noted that staff RAIs and comments on the pilot applications need to be incorporated into the guidance document. In response, general agreement was noted, but not committed. Pilot plants are expected to be in compliance with the guidance document, and so a resolution of these submittals with the final guidance document will have to occur at some point.

8. NRC comment #8 noted that the two RICTs were referred to in a variety of ways. In response, standard terms were defined and applied ("RMAT" and "safety limit RICT"). The staff identifies that the term "safety limit" has specific meaning in both TS and regulations, and that using simply "RICT" would eliminate any concerns. The staff also notes that the existing guidance still uses other terms ("lower level RMTS thresholds" on page 3-19, "upper level RMTS thresholds" on page 3-20) and also employs a limit for instantaneous CDF or LERF which is treated the same as the safety limit RICT.

10. NRC comment #10 asked for clarification of "individual maintenance configuration". In response, the guideline referred to Appendix A for the definition of "maintenance configuration. The staff notes that the term "maintenance configuration" is used twice on page 2-1 prior to the reference to Appendix A, and suggests the reference be made on the first occurrence. Further, it is noted that "maintenance configuration" is again defined on page 2-2 with different wording than is found in Appendix A (specifically, does not include alignments and conditions within its scope).

13. NRC comment #13 discussed the use of the maximum safety limit RICT (10^{-5} CDP or 10^{-6} LERP) for emergent conditions, and the potential for abuse of forced, unscheduled extensions of planned maintenance. In response, the guideline was revised; however, the staff has additional questions regarding the two calculated RICT limits.

    a. Is a pre-planned configuration which is ***projected*** to exceed the RMAT (lower) threshold permitted? The revised guidance document does not appear to have this limitation, except in section 3.5.2.2, where it states "planned maintenance target outage times should be established at low risk levels". Please clarify the guidelines.

    b. If restoration of the plant configuration is not ***projected*** by the calculated safety limit RICT (upper) threshold or the backstop CT, is the plant required to apply the limiting TS LCO action for the not met condition immediately, or is continued plant operation up to the RICT permitted? Note that in response to question 1(a) for the TSTF-424, "Risk-Informed HPSI AOT/CT Extension", it was stated that "Maintenance projected to exceed the RICT…or maintenance that will extend beyond the backstop AOT/CT will be considered to have the TS REQUIRED ACTION NOT MET…". Please clarify the guidelines.

    c. As written, the guidance document (page 2-2 and 2-3) states that risk management activities are not required to be implemented until the point in time is reached where the integrated risk has reached the threshold. This is also found on page 2-5, where "progressively-phased risk management actions" are discussed. Since the RMAT limit is set at 10% of the RICT, it would be reached at 72 hours (3 days) assuming a 30 day RICT was applicable; typically, the front-stop CT is 72 hours, implying RMAT would immediately apply if a restrictive (< 30 day) RICT was in effect. Further, the 12 hour allowance for recalculating the RICT for emergent conditions may result in

exceeding the revised RMAT. Consistent with the process in NUMARC 93-01, risk management is intended to be assessed prior to maintenance activities. It is appropriate to apply risk management activities for the entire duration of the maintenance configuration, when the expected duration of the configuration will cause the RMA risk threshold to be exceeded. Any planned configuration which is projected to exceed the target RMA threshold should require appropriate RMAs for the entire duration of the configuration. Please comment.

15. NRC comment #15 dealt with the 24 hour period to re-assess and calculate a revised RICT for emergent conditions. In response, the guideline has been revised to provide for a 12 hour time limit. However, in other parts of the guideline, it is stated that configuration risk can be calculated "in a nearly real-time manner" (page 2-5). Further, if TS 3.0.3 results from the emergent condition, "the timing for RICT recalculation will be defined by the required TS 3.0.3 action statement time" (page 2-5). And further (page 3-3) an emergent condition is typically assessed "…within the front-stop CT action time…"

    In the response, it was stated that nothing new was being proposed regarding the front-stop CTs. However, the response further states that when multiple AOT front stops apply, the single RICT would apply ***in lieu*** *of* these multiple AOTs. If an emergent failure occurs during the time a RICT is in effect, it could be interpreted that the new applicable AOT front stop does not apply because a RICT is in effect, and the plant has up to 24 hours to re-calculate the RICT regardless of the time limits of the front-stop.

    a. It is expected that, during implementation of a RICT, any emergent condition which could adversely impact (i.e., shorten) the RICT will be promptly evaluated to obtain a new RICT as soon as possible. Please discuss.

    b. Re-calculation of a RICT cannot be delayed beyond the front-stop of any applicable TS. Please discuss.

    c. As noted, the guideline states that TS 3.0.3, if applicable due to emergent conditions, will determine the time for RICT recalculation. If TS 3.0.3 is applicable, then the RICTs should no longer be in effect. As written, this implies that if the RICT allows continued operation when TS 3.0.3 is applicable, then the RICT could override TS 3.0.3. Please clarity the guidance.

    d. In the response to this comment, the 12-hour time period was proposed "based on practical needs to collect information". It is not clear what information regarding plant configuration would require this extended period, justifying delaying RICT determination, and this seems inconsistent with "nearly real-time manner" described in the guideline for RICT calculations. Please discuss, and provide specific examples of this type of information which would justify a 12 hour delay in RICT calculation.

    e. Section 3.2 item 9 states that reassessment be performed "on a reasonable schedule commensurate with the safety significance of the condition". This is contradictory to the prior guidance which provides time limits, and is circular in that the plant may not know the safety significance until it is actually assessed. This same item requires a plant-specific re-assessment time to be submitted, which is not reflected anywhere in the guidance.

17. NRC comment #17 identified the need for a risk-informed shutdown process. In the response, it was stated that no new process is required because the RICT is simply an extension of existing CTs, and once exceeded, the requirement for plant shutdown is no different than exists under the current TS requirements. The staff requests clarification of the following issues related to TS required actions for exceeding the RICT.

    a. On page 2-5, the guidelines state "In cases where the plant is found to have already exceeded the revised RMA threshold RICT, the plant staff would re-evaluate the impact, implement compensatory measures or risk management actions as appropriate, and initiate a decision process to implement RMAs, including, as

appropriate, transitioning the plant to a lower-risk configuration." It is not clear what re-evaluation is required, if the RICT re-calculation has been completed. It is also not clear how to resolve requirements to both implement RMAs and initiate a decision process to implement RMAs, nor how RMAs could not be implemented once the RMA threshold has been exceeded. Please clarify the intent of this requirement.

b. On page 3-2, the first un-numbered paragraph discusses the use of upper bound analyses to address transition and lower mode risk. It is not clear how it can be known if the at-power risk is bounding unless these other risk analyses are completed for comparison. Please comment.

c. On page 3-3, the first un-numbered paragraph states that the risk assessment for unscheduled conditions should typically be performed within the "front stop CT action statement time duration". It is assumed this is simply the front stop CT. Under what conditions could such an assessment not be completed by the front stop CT without being in noncompliance with the TS to take the action within the time limits?

d. On page 3-3, item 3 states for emergent conditions that "If continued plant operation is expected, a quantitative screening assessment will be performed within 12 hours…". It is assumed that the "quantitative screening assessment" is the RICT recalculation. Please clarify the intent of the guidance.

e. On page 3-14 first bulleted item permits voluntary entry into high risk configurations ($> 10^{-3}$ CDF or 10^{-4} LERF) "for short periods of time and only with a clear detailed understanding of which events dominate the risk level". This is inconsistent with Table 3-2, which provides the same action as is taken for exceeding the maximum safety limit RICT, and similar statements on page 2-5. Please clarify the guidance.

f. On page 3-14 item 2 states "These risk acceptance guidelines [assumed to refer to Table 3-2] should be ***considered*** with respect to establishing risk management actions and, when appropriate, taking TS-required actions, including, where specified by applicable TS, plant shutdown." These risk guidelines are the stated threshold limits requiring actions for the RMTS. The wording "should be considered" implies flexibility. Please clarify the guidance.

g. On page 3-22, the guidelines state that TS required actions (including shutdown) "should be ***considered*** for plant configurations where instantaneous and cumulative risk measures are predicted to exceed upper-level RMTS thresholds presented in Table 3-2". The guidance continues with a bulleted list of considerations regarding making a shutdown decision. Again, these risk thresholds are the TS limits under the RMTS, and the wording "should be considered" is not appropriate. Please clarify the guidance.

19. NRC comment #19 requested guidance on analyzing inoperability to assure a proper risk calculation is performed. In response, the defined term "functionality" was referenced as providing the guidance.

In Appendix A, functionality refers only to those functions of a component required (and therefore modeled) in the PRA used to determine a RICT. When a component(s) is declared INOPERABLE, it should be normally be considered non-functional in the RICT evaluation. Exceptions to this would apply only when the cause of the inoperability is clearly impacting only specific functions which are discernable in the PRA model. The guidelines must explicitly address this issue to assure consistency. The staff has additional concerns which should be addressed in the generic guidelines, if functionality is to be used for RICT calculations.

a. For unplanned inoperability of a component due to performance degradation, the guidance should specify that the component is non-functional. If not, when some residual capability remains available, how will the residual functionality be determined in order to properly maneuver the PRA model and calculate risk? For example, a

pump could have degraded performance and be declared inoperable. If some credit is to be taken for its function in determining the RICT, will this be based on operator or engineering judgment, based on preplanned assessments, or require detailed engineering calculations? How will the plant assure that further degradation would not occur during the RICT extension which would impact the functionality determination?

b. Again considering unplanned inoperability, if a pump is declared inoperable due to quality issues which do not affect the immediate pump performance characteristics but could cause degradation during accident conditions (i.e., qualification issues, material discrepancies, errors in supporting design calculations), will the affected component(s) be conservatively declared non-functional, or considered fully functional? What factors must be considered in making such a decision?

c. Many design basis operability requirements are not modeled in the PRA due to minimal impact on the baseline risk profile (e.g., diesel generator start times for mitigation of LOCAs with concurrent loss of offsite power, hot leg recirculation, reactor trip for LOCAs and SGTRs, accumulator injection for large LOCAs). However, it is possible that some design basis requirements not included in the PRA model could become risk-significant depending upon the specific maintenance configuration. Other requirements establish safety margins which are not considered necessary to support a best-estimate risk analysis. If functionality is used in calculating the RICT, then there would be no risk impact for the loss of such functions (because they are not in the PRA model) and a 30 day backstop CT would apply. Please discuss how the implementation of the RMTS program will address such design basis operability issues.

20. NRC comment #20 requested guidance for qualitative assessment of maintenance items outside the scope of the quantitative assessment tool. In response, the guidelines have identified only the high level characteristics of qualitative analyses applicable to conditions not modeled in the PRA. The use of qualitative assessments to calculate an RICT, section 3.2 item 2, is inconsistent with section 3.5, the 2nd paragraph, which defines a strictly quantitative calculation for the RICT. Further, in response to related questions (7.2.1, 7.2.2, 44) for the TSTF-424, “Risk-Informed HPSI AOT/CT Extension”, the use of quantitative risk estimates for planning and tracking risks was confirmed, and that quantitative treatment of external event risk would be done unless confirmed to have small/negligible impact on RICT calculation.

An RMTS program including flexible RICT calculations should typically require a full scope PRA model capable of providing an integrated, quantitative assessment of all significant risk contributors, and that exclusion of categories of events (i.e., fire, flood, seismic) should be based on demonstration that these risks are negligible for a particular plant.

If specific details are not provided in the generic guidance for incorporating qualitative and bounding evaluations into the RICT calculation, then the plant-specific methods will be required to undergo review and approval before RMTS can be implemented for plants which do not have full scope PRA models and propose to implement RMTS using such a blended approach for RICT calculations. This would limit the efficiency of a generic approach to RMTS with regards to regulatory review impacts.

The staff has additional concerns regarding the guidance for RICT calculations:

a. Page 3-1, item 2 allows qualitative assessments to be applied in RMTS when the quantitative assessment tool “is otherwise unavailable”. A quantitative assessment of risk to support the RICT using the CRMP tool is considered a requirement, and the guidance should require exiting any RICTs if the quantitative assessment cannot be

performed, either due to unavailability of the CRMP tool or conditions outside the scope of the tool's capabilities.

b. Section 3.2 item 4 states that the assessment should consider the degree of reliance on SSCs which are categorized as (a)(1) within the 10CFR50.65 program. It is not specified how to adjust the RICT to account for this item.

c. Section 3.2 item 4 states that the assessment must include the likelihood of a significant initiating event due to the maintenance configuration "as determined by each licensee". It is not clear what this item intends to require with regards to the calculation of RICTs.

d. Section 3.4 states that a blended approach consistent with NUMARC 93-01 is acceptable for plants without a full scope PRA. Section 3.4.2 then identifies that the qualitative assessment is used to confirm that the unmodeled items are not significant. If the qualitative assessment cannot accomplish this, the use of RMAs is allowed to justify the use of the calculated RICT. The staff does not agree that compensatory measures can be used in lieu of a quantitative risk calculation when even a qualitative evaluation shows the unquantified events to be potentially significant.

23. NRC comment #23 requested clarifications on the flowchart in Figure 3-1. The staff requests additional clarification on certain issues:

a. The first block uses the term "zero maintenance configuration" when referring to the "current/planned plant SSC configuration". The response stated that this is the condition when all RMTS scope equipment is functional. The flowchart for this condition states the RICTs are not applicable for this condition, but the plant should apply the TS LCO CT. This is assumed to mean the front-stop CT; please clarify to use consistent terms. As written, this would mean that if RMTS components were INOPERABLE but fully functional (as per the original response defining the "no maintenance configuration"), RICTs could not be applied. This is clearly not the intent of the guidance, and the staff does not understand the intent of this first block in the flowchart. If the plant is in a "no maintenance configuration", no RMTS LCOs should be applicable; please review and revise the flowchart to clarify this situation.

b. The flowchart identifies a requirement for "qualified staff" which is not found in the text of the guidance.

c. The flowchart identifies a requirement for review and approval of RICT assessments which is not found in the text of the guidance.

25. NRC comment #25 addressed facility and procedure alterations to support maintenance. In response, it was stated that specific guidance was added to the draft regarding consideration of such alterations in the PRA model. Please specify where this additional guidance was added, since the current draft is unchanged on page 3-7, item 7.

26. NRC comment #26 addressed emergent conditions. In response, the definition of "emergent event" was identified. However, the definition of "emergent event or emergent condition" in Appendix A refers to unplanned changes in equipment functionality or expected duration of planned maintenance, and does not include items identified in section 3.2 item 9, i.e., mode changes and external conditions. Please revise the guidance to assure consistency of text and defined terms.

36. NRC comment #36 dealt with required documentation. In response, very general documentation guidance (section 3.7) were provided. The staff believes that the generic guidance provided should be enhanced to assure consistency of the minimum information necessary to fully understand how the RICT was calculated and the risk managed, for proper regulatory oversight and utility management of the RMTS program.

a. Item 1 states that "The RICT assessment process itself will be documented." Please clarify what this is intended to require.

b. Item 2 first states that "it is not necessary to document the basis of each RICT assessment…", then states that the assessments and RMAs for each extended CT entry must be documented. Please resolve this apparent discrepancy.

c. Item 2 requires each individual plant to define its documentation requirements and include them in its submittal for RMTS implementation. It is not clear why the requirements for documentation should be plant-specific.

d. Item 2 allows a checklist approach for "individual applications of a RMTS RICT". Since it is essential that the documentation allow a thorough understanding of how the PRA model was maneuvered and the assumptions and bases for any qualitative inputs to the RICT assessment, along with understanding of any RMAs implemented, the use of a checklist would not seem to be adequate. Please clarify specifically when checklists are and are not appropriate within the RMTS program and provide a basis for the different documentation requirements.

e. The required documentation would be different for plants which use a full scope PRA model to quantify the RICT, compared to plants which use qualitative or bounding analyses. More documentation of the basis for a qualitative assessment and calculation of a quantitative RICT would be necessary so the results are understandable and reproducible. If such qualitative assessments are to be allowed, then this should be addressed in the generic guidelines.

40. NRC comment #40 requested personnel qualifications be addressed. In response, it was stated that the RMTS program was not unique as a risk-informed application, and such issues would be addressed in plant-specific submittals, if necessary.

Technical Specification compliance is essential to assure that plants are operated safely and in compliance with their operating licenses. Licensed operators have the responsibility to assure compliance with TS. The RMTS program introduces the requirement of applying the PRA quantitatively (and qualitatively, by the current guidance) to the determination of allowed outage times. Although similar calculations are done to support 10CFR50.65(a)(4), it is not required that licensed operators either perform or understand these calculations because the plant TS limits still govern plant operations. Therefore, the RMTS program is a different risk-informed application, and implementation should require proper training of licensed operators and support personnel in PRA fundamentals, interpretation of PRA results, and application of the CRMP tools. The staff believes that the generic guidelines should address the necessary elements of such a training program for RMTS implementation.

42. NEW COMMENT The staff finds the current draft of the RMTS Guidelines repetitive and difficult to follow, and believes that in their current form, they would be difficult for a plant to correctly develop its plant-specific program using this guidance. Merging existing 10CFR50.65(a)(4) guidance with the specific requirements applicable to RMTS is adding to the confusion. Many of the questions raised deal with conflicts where the same information is being presented multiple times with different wording. Numbered lists of requirements are provided which are then supplemented with text which introduces new requirements, and sometimes followed by additional numbered lists. Requirements (shall, must), recommendations (should), permissions and good practices (can, may) are scattered throughout the document. A numbered section can run several pages, with no subsections to break up the guidance.

The industry may wish to reconsider including existing maintenance rule guidance in the RMTS program guidance. A simpler approach may be to specifically define the elements of RMTS and RICT calculations, and simply reference maintenance rule guidance when appropriate.

The document should be revised in structure to eliminate duplication of information, to clearly identify the requirements of the RMTS program implementation, to make the terminology consistent across the document, and to provide a clear overall structure to the sections and subsections, and assure that relevant information is in the proper sections. Numbered lists should be complete, and the amplifying text following should not introduce new items. Consideration should be given to not repeating existing maintenance rule guidance, where nothing new is being required for RMTS.

43. NEW COMMENT The threshold for calculating the safety limit RICT of 10^{-5} ICDP seems high. Pilot plants are showing typical calculated RICTs above the 30 day backstop for expected configurations using this threshold. Using this threshold, the instantaneous CDF would have to increase by 1.2E-4 per year above the baseline CDF, in order for any more restrictive RICT than the 30 day backstop to be applicable. Is such configuration risk expected to be typical of the lower end maintenance risk, since this risk equates to a 30 day outage time? Further, Regulatory Guide 1.174 provides risk increase limits of 1E-5 per year for any plant change, which would imply that only one entry into extended RICTs up to the calculated limit would be expected. Also, Regulatory Guide 1.177 suggests a 5E-7 limit for any single LCO change. The staff recommends reconsideration of the RICT risk thresholds by a review of the existing regulatory guidance and current plant maintenance practices, in order to justify that the proposed thresholds are appropriate.

44. NEW COMMENT The guidelines make reference to the maintenance rule program, and enhancements made by these guidelines. The differences between the existing guidance for maintenance rule and these guidelines should be clearly delineated in summary fashion at some location in the document. Further, since the RMTS program covers all configuration risk including maintenance activities, specific references in the document to maintenance activities, maintenance personnel, etc. should be carefully reviewed to determine if a broader scope term is appropriate to the context.

45. NEW COMMENT Section 3.1 states that the scope of the assessment may be limited to risk significant SSCs. Section 3.3 also states this limitation. Such a limitation is reasonable when the existing TS controls are in place to limit the time for configuration risk, but in a RMTS program, any exclusion of SSCs from the assessment may not be appropriate, and is inconsistent with Regulatory Guide 1.177, 2.3.7.

46. NEW COMMENT On page 3-11 it is stated: “RICT values for a specific maintenance configuration are calculated simply by dividing the appropriate associated cumulative risk limit in Table 3-2 by its configuration instantaneous risk frequency.” This is incorrect, since this calculation would not take into account the accumulated risk from prior configurations which may have occurred during the time while the component subject to the RICT is inoperable. The calculation of the RICT is required to be based on an integration of configuration specific risk as it is being incurred. The safety limit RICT is based on requiring appropriate actions of the TS when the ICDP has accumulated to 10^{-5} (or ILERP of 10^{-6}). The RICT at any point in time is calculated by subtracting the total risk accumulated up to the current time from the 10^{-5} limit (for ICDP, 10^{-6} for ILERP), and dividing that amount of risk by the configuration-specific instantaneous risk frequency.

    Similarly on page 3-4, pre-analyzed RICTs for various maintenance configurations is suggested. The instantaneous level of risk could be pre-analyzed, but again, the RICT is dependent upon the prior risk incurred, which cannot be pre-analyzed since the specific configurations and durations would not be known ahead of time.

    Also section 3.2 item 9 states that the risk of an emergent condition which is restored prior to the time limit required for risk assessment “need not be performed for purposes of supporting the maintenance activity”. However, this would then result in not accumulating that integrated risk against the RICT limits.

Please clarify and make the guidelines consistent. The example provided on pages 2-3 and 2-4 do not identify what the RICTs would be for these scenarios, but providing this information and how it is calculated would enhance the guideline.

47. NEW COMMENT The guideline does not provide any requirements for addressing plant modifications not yet incorporated into the PRA model, or handling the discovery of model errors. While Regulatory Guide 1.200 addresses model updates, in that there is a requirement to consider the impact of plant changes on applications, it is not specific for the real time use of a PRA model for TS compliance, and does not address error discovery. The RMTS program should provide requirements in this area, and the generic guidelines should address the issue to assure consistency of the manner in which items are handled and documented. The staff also notes that the most recent version (August 2005) on page 3-3 states that risk assessments will use an "approved" risk model, while the prior version (December 2004) identified the use of an "as-built, as-operated" plant model. The staff is not clear of the intended meaning of the term "approved", nor the reason to eliminate the "as-built, as-operated" terms.

48. NEW COMMENT The following items need to be corrected or clarified:

a. Only the first use of an acronym should be defined in the text. For example, RMTS is first used and defined on page v in the first paragraph, then used on page 1-1 without redefinition, then redefined on page 1-2 in two places.

b. Page 1-3 states that it is not intended to modify the manner in which maintenance rule requirements are met; however, page 1-2 identifies that the guide "refines and supplements" existing maintenance rule guidance, page 3-1 states that the guidance "replaces existing (a)(4) guidance, and page 3-2 identifies that the guide "enhance the existing (a)(4) process", but then states an assumption that the plant is "fully compliant with 10CFR50.65(a)(4)", even though this guideline changes that process. (Note that it is also unclear why it must be stated as an assumption that a plant complies with a regulation.) Page 3-3 references section 11 of reference 3, which is the guidance which this document was to replace.

c. Page 2-1 identifies existing fixed CTs for "…specific plant equipment *related to the maintenance of key plant safety functions*." Please clarify this statement, since the existing CTs are not limited to "key" safety functions, nor are they specifically related to only maintenance.

d. Page 2-2, the connotation of the various CTs as a form of defense in depth should not be made, since this term has specific regulatory significance. The next sentence after this is also unclear as to what it is intended to convey with regards to an RMTS program.

e. Page 2-2, the statement that the guidance for continuing maintenance beyond the front stop "must be consistent with the Maintenance Rule Guidance" is not complete, since this guidance provides additional requirements beyond MR.

f. Page 2-2 states that "risk managed LCOs" are entered when components are declared inoperable, but the guidance does not require any different approach until the front-stop CT is exceeded. It is also not clear if the term "risk-managed LCOs" is different than RMTS.

g. Page 3-1 uses "potential" plant configuration, but the RMTS applies to emergent conditions, and ultimately only considers actual plant configurations which are entered.

h. Page 3-2 the third full paragraph is unclear as to its intent; it seems to be restating the purpose of the guideline, but uses phrases "accommodate a greater plant control function", "pragmatically retained", and "risk-informed format".

i. Page 3-2 states that the RMTS replaces the fixed CT *and the prescriptive actions*; the RMTS does not change actions, only the time allowed until the actions are required to be initiated.

j. Page 3-4 states "The RICT risk assessment process will focus on the entire maintenance evolution…" The meaning is unclear, since the assessment must consider the whole plant configuration, so it is indeterminate what this statement intends.

k. Page 3-4 identifies pre-analyzed conditions for combinations of "*disabled safety function equipment trains* and instrument channels". The phrase *disabled safety function equipment trains* is assumed to refer to the inoperable components subject to a RICT. Combinations of such equipment with inoperable instrument channels is not typically a significant risk contributor, rather it is combinations of safety equipment.

l. Section 3.4 first sentence up to the semicolon is not a complete phrase.

m. Section 3.4.1 item 1 is vague and general, and does not seem to add anything specific. For example, a requirement to include quantitative frequencies from the PRA seems a bit too obvious to require stating; the PRA requires "certain attributes", which are then not defined; "reasonably reflect actual configuration" again seems obvious.

n. Section 3.4.1 item 2 is also very wordy and vague – if an SSC is not modeled but causes a modeled SSC to be unable to function, then the PRA tool should consider the supported SSC non-functional. Words like "significant to the success path", "contribute to the unavailability", are unnecessarily vague and misleading.

o. Section 3.4.2 item 6 first sentence is not understood in that it addresses potential impacts of weather and other external conditions relating to consideration of external events and internal fires.

p. Section 3.5.2.1 – the discussion of "factors of duration" is confusing and requires clarification as to intent.

49. NEW COMMENT In Appendix A – Glossary of Terms, some items require clarifications:

a. The definition of AVERAGE RISK is compared to the baseline no-maintenance risk and is identified as "generally greater than" the no-maintenance risk. Similarly, the BASELINE RISK is identified as "generally less than" the average risk. It should not be possible to reduce the plant risk by including maintenance in the model, so the word "generally" should not be used. AVERAGE RISK will always be greater than BASELINE RISK, as they are defined.

b. The definition of BACK-STOP COMPLETION TIME should not be tied to completion of maintenance, nor specified maintenance configuration. It is a limit for restoration to OPERABLE status of all components for which extended CTs are in effect, after which the limiting TS actions must be implemented, regardless of the status of ongoing maintenance.

c. The definition of INSTANTANEOUS CORE DAMAGE FREQUENCY (CDF_{inst}) states that the parameter is continuously calculated and reported hourly. A similar definition is applied for the corresponding LERF term. Such requirements for continuous and hourly reporting do not exist in the guidance, and have no bearing on the definition of the terms.

d. The definition of PROBABILISTIC RISK ASSESSMENT (PRA) states that it is "a qualitative and quantitative assessment of risk…" Qualitative assessments of plant risk are, by their nature, not probabilistic. The use of the term PRA/PSA refers to the quantitative risk models used to generate CDF and LERF.