Table 1
NRC RESPONSE TO ASME COMMENTS THAT ARE IN AGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
IE-C12	For Cat I and II, there is no minimum list of features and procedures that could significantly influence the ISLOCA frequency.	Cat I and II: "In the ISLOCA frequency analysis, INCLUDE features of plant and procedures that could significantly influence the ISLOCA frequency: **(a) configuration of potential pathways including numbers and types of valves and their relevant failure modes, existence and positioning of relief valves** **(b) provision of protective interlocks** **(c) relevant surveillance test procedures**"	Agree with the suggested items, but these should also apply to Category III. Suggested words should be applied to all 3 categories; for Cat III follow with "**Also**," and then the current list.	Staff agrees with CNRM proposed resolution. NRC position: For complete staff position, see attached Table 5.
AS-A6	As written, with the term "where practical," there is no minimum, there is no SR for when it is not practical.	"Where practical, sequentially ORDER....in the accident progression. **Where not practical, provide the bases and provide the rationale used for the ordering.**"	Agree with comment but delete "~~provide the bases and~~", since rationale covers this.	Staff agrees with CNRM proposed resolution. NRC position: "Where practical, sequentially ORDER....in the accident progression. **Where not practical, provide the rationale used for the ordering.**"
SY-B12	It is not clear what is an acceptable justification for deviating from the standard; as such, the requirement is too open ended.	"~~COMPARE~~ **MODEL the limitation of** the available inventories of air, power, and cooling with ~~those required~~ respect to support**ing** the mission time. ~~TREAT these inventories in the model unless a justification is provided.~~"	Agree in principle. Propose a modified version of this comment: "**MODEL the ability of the available inventories of air, power, and cooling to support** the mission time."	The staff agrees with the CRNM proposed change to the Standard, if the change also includes deletion of sentence ~~TREAT these inventories in the model unless a justification is provided.~~ This item was discussed at the CNRM subcommittee meeting with the resolution that the sentence be removed. NRC position: "~~COMPARE~~ **MODEL the ability of** the available inventories of air, power, and cooling ~~with those required~~ to support~~**ing**~~ the mission time. ~~TREAT these inventories in the model unless a justification is provided.~~"

Table 1
NRC RESPONSE TO ASME COMMENTS THAT ARE IN AGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
DA-D5	Cat I, does not appear to be consistent with SY-B1. Cat II and III: the SR already provides the generally used and known approaches, therefore, it is not clear what is an acceptable justification for an alternative. As such, the requirement is too open ended.	Cat I: "USE the Beta-factor approach **(i.e., the screening approach in NUREG/CR-5485)** or an equivalent for the estimation of CCF parameters." Cat II and III: "...JUSTIFY the use of alternative methods **(i.e., provide evidence of peer review or QA of the method which demonstrates its acceptability)**.	Accept comment for Capability Category I. For Capability Categories II and III, accept the comment except substitute the word "**verification**" for "~~QA~~." The term Quality Assurance is not correct in this context.	Staff agrees with CNRM proposed resolution. NRC position: For complete staff position, see attached Table 5.
IF-C2	It is not clear what is an acceptable justification for deviating from the standard; as such, the requirement is too open ended.	"....~~JUSTIFY any credit given, particularly any credit given for~~ **INCLUDE credit only when there are available** non-flood proof doors or barriers, and ~~credit~~ **procedures or skill of the craft exist for isolation of a flood source including the method of detection (i.e., operator detection via control room indication or alarms)**, accessibility to the isolation device, and time available to perform the action.	Agree in principle. Suggest the following change to replace what was added: "**INCLUDE credit for non-flood proof doors ~~as~~ or barriers for isolation of flooding only where the credit is justified by consideration of methods of detection, accessibility to the isolation device, and time available to preform the action with due consideration of procedures and skill of the craft**."	Staff agrees with CNRM proposed resolution. NRC position: ...~~JUSTIFY any credit given, particularly any credit given~~ **INCLUDE credit** for non-flood proof doors or barriers **for isolation of flooding only where the credit is justified by consideration of ~~, and credit for isolation of a flood source including the~~** method**s** of detection, accessibility to the isolation device, and time available to perform actions **with due consideration of procedures and skill of the craft**.".
LE-D5	The modifiers (e.g., may, possible) in Cat I, II and III appear to eliminate the distinction between Cat I, II and III, and do not provide a minimum in Cat I or II.	Cat I: "TREAT induced SG tube rupture in a conservative manner." ~~A realistic treatment may be used.~~ Cat II: "TREAT induced SG tube rupture in a realistic manner, ~~when practical. Conservative treatment may be used, when justified.~~"	Accept comment. Also add "**thermally-induced"** between "TREAT" and "SG" for all categories.	Staff agrees with CNRM proposed resolution. NRC position: Cat I: "TREAT **thermally-**induced SG tube rupture in a conservative manner." ~~A realistic treatment may be used.~~ Cat II: "TREAT **thermally-**induced SG tube rupture in a realistic manner, ~~when practical. Conservative treatment may be used, when justified.~~" Cat III: "TREAT **thermally-**induced SG tube rupture in a realistic manner.

Table 1
NRC RESPONSE TO ASME COMMENTS THAT ARE IN AGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
6.1.2	See issue discussed on 5.4.	3rd para: "NEI-00-02 provides an example of an acceptable review methodology **(subject to clarifications and qualifications described in Appendix B of this regulatory guide)**; however, the differences....."	This comment is appropriate for DG 1122, but not for ASME RA-S-2002	Staff agrees with CNRM proposed resolution. NRC position: no objection
6.2.2	As written, in Section 6.2.2.2, it appears that the constraints on the team members only apply when the review is performed for a PRA upgrade. See issue discussed on 5.4.	"6.2.2.1 The peer review team members individually shall (a) be knowledgeable....(b) be experienced ....for which the reviewer is assigned. **The peer review team members shall (a) not be allowed to review their own work or work for which they have contributed, (b) not be allowed to review a PRA for which they have a conflict of interest, such as a financial or career path incentive or disincentive that may influence the outcome of the peer review.** 6.2.2.2 When a peer review is being performed on **a PRA maintenance or** a PRA upgrade, reviewers shall have knowledge and experience appropriate for the specific PRA Elements being reviewed. However, the other requirements of this Sections shall also apply." ~~The peer review team members shall (a) not be allowed to review their own work or work for which they have contributed, (b) not be allowed to review a PRA for which they have a conflict of interest, such as a financial or career path incentive or disincentive that may influence the outcome of the peer review.~~	Agree to move the Team requirements to 6.2.2.1. Do not agree to add maintenance to 6.2.2.2. See comment on 5.4.	Staff agrees with CNRM proposed resolution. NRC position: "6.2.2.1 The peer review team members individually shall (a) be knowledgeable....(b) be experienced ....for which the reviewer is assigned. **The peer review team members shall (a) not be allowed to review their own work or work for which they have contributed, (b) not be allowed to review a PRA for which they have a conflict of interest, such as a financial or career path incentive or disincentive that may influence the outcome of the peer review.** 6.2.2.2 When a peer review is being performed on a PRA upgrade, reviewers shall have knowledge and experience appropriate for the specific PRA Elements being reviewed. However, the other requirements of this Section shall also apply." ~~The peer review team members shall (a) not be allowed to review their own work or work for which they have contributed, (b) not be allowed to review a PRA for which they have a conflict of interest, such as a financial or career path incentive or disincentive that may influence the outcome of the peer review.~~

Table 2
NRC RESPONSE TO ASME COMMENTS THAT ARE IN AGREEMENT WITH NRC POSITION BUT NO REVISION TO STANDARD PROPOSED

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
1.1	The standard is only for current generation LWRs, the requirements may not be sufficient or adequate for other types of reactors	"This Standard sets forth requirements for Probabilistic Risk Assessments (PRAs) used to support risk-informed decisions for commercial light water reactor nuclear power plants, and prescribes a method for applying these requirements for specific applications **(additional or revised requirements may be needed for more advanced reactor designs)**."	While we agree with the comment, no action to change the scope statement of the Standard is proposed. The stated scope of the Standard is sufficient to address current designs. Changes to address unique aspects of advanced or non-LWR designs will be proposed as a need for these changes is identified. It is appropriated for this qualifier to be included in the body of the Regulatory Guide.	The staff agrees that the Standard is sufficient to address current designs; however, the staff maintains that the requirements may not be sufficient or adequate for other types of reactors which is the basis for the clarification in DG-1122. Without this clarification in the Standard, it is implied that the requirements may be sufficient or adequate for other types of reactors. ASME is encouraged to include a qualifying type statement in the addendum. This item was discussed at the ASME CNRM subcommittee meeting with the resolution to address this item in the addendum. NRC's position reflects the resolution proposed at the meeting. NRC position: "This Standard sets forth requirements for Probabilistic Risk Assessments (PRAs) used to support risk-informed decisions for **current** commercial **light water reactor** nuclear power plants, and prescribes a method for applying these requirements for specific applications **(additional or revised requirements may be needed for other reactor designs)**."
IE-C9	Fault tree modeling of an initiating event is plant-specific by definition (see IE-C6 thru IE-C8) and the treatment of recovery actions needs to be consistent with the requirements in the HRA section of the standard (HR-F and HR-G).	Cat I: ~~No requirement to use plant-specific information in the fault-tree modeling.~~ **"If fault-tree modeling is used, USE plant-specific information in the assessment and quantification of recovery actions where available. See Human Reliability Analysis (para. 4.5.5) for further guidance."**	Agree that SR is inconsistently worded as-is. But Cat I should not require plant-specific treatment of recovery actions. Disagree with comment, but retain for future revision of SR.	The SR requirement as written allows a user to completely ignore plant-specific information and rely entirely on non-plant-specific information "in the fault-tree modeling." The development of such a fault tree has no meaning. The HRA provides SRs for the assessment and quantification of recovery actions for a Cat I. The reference to para 4.5.5 ensures this model is consistent with the SRs for an HRA (i.e., assessment and quantification of recovery actions) for Cat I. The staff maintains its position and encourages ASME to change this SR in the Addendum with the resolution to address this item in the addendum. This item was discussed at the ASME CNRM subcommittee meeting with the resolution to address this item in the addendum. NRC's position reflects the resolution proposed at the meeting. NRC position: Cat I: ~~No requirement to use plant-specific information in the fault-tree modeling.~~ **"If fault-tree modeling is used, USE information in the assessment and quantification of recovery actions, where available, consistent with the Human Reliability Analysis (para. 4.5.5)."**

Table 3
NRC RESPONSE TO COMMENTS NOT ADDRESSED BY ASME

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment (Note 1)	NRC Position
Chapter 2				
Best estimate	Best estimate, as defined, is never used in the standard. The term, as used in the standard (SC-B1), does not match the provided definition; the term is used to mean realistic which is already stated in the requirement (see SC-B1)	~~*best estimate*: the point estimate of a parameter that is not biased by conservatism or optimism. Generally, the best estimate of a parameter is represented as a mean value.~~	ASME agrees with staff position	The staff maintains its position and proposed resolution
key safety functions	The functions listed are imprecise and redundant (e.g., core heat removal is redundant with both reactor coolant inventory control and reactor coolant heat removal) and other safety functions are missing.	"...These include reactivity control, ~~core heat removal~~, **reactor pressure control**, reactor coolant inventory control~~, reactor coolant heat removal~~, **decay heat removal**, and containment integrity in appropriate combinations..."	ASME agrees with staff position	The staff maintains its position and proposed resolution
large early release	QHOs address both early and latent fatalities where LERF is used as a surrogate for the early fatality QHO, therefore, the definition to include the potential for early health effects is necessary.	"...of off-site emergency response and protective actions **such that there is a potential for early health effects**."	ASME agrees with staff position	The staff maintains its position and proposed resolution
Skill of the craft	This term is used in the standard and a definition is necessary.	**skill of the craft: that level of skill expected of the personnel performing the associated function**	ASME agrees with staff position	The staff maintains its position and proposed resolution
unavailability	Fraction of time is one method for calculating unavailability, it is not suitable for calculating unavailabilities such as failure on demand.	"The **probability** that a system or component is not capable of supporting its function..."	ASME agrees with staff position	The staff maintains its position and proposed resolution
Chapter 4				
4.3.3	The use of the word "should" does not provide a minimum requirement.	"The PRA analysis team **shall** ~~should~~ use outside experts..."	ASME agrees with staff position	The staff maintains its position and proposed resolution
IE-A2	There is no definition of "active components." As such, the requirement is unclear and too open ended.	"...(c) ISLOCAs: INCLUDE postulated events representing active components **(i.e., components that will need to change state)** in systems interfacing with the reactor coolant system..."	ASME agrees with staff position	The staff maintains its position and proposed resolution

Table 3
NRC RESPONSE TO COMMENTS NOT ADDRESSED BY ASME

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment (Note 1)	NRC Position
IE-A4	As written, the distinction between Cat II and III could be taken to mean that only those initiating events resulting from failures of complete systems as opposed to single trains of systems will be considered.	Cat II: "USE a structured approach .... to assess and document the possibility of an initiating event resulting from **individual** system**s** or **train** failures."	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position.
IE-A5	As written, there is an implication that more work is needed in (a): not every event that occurs at other than at-power operation should be incorporated.	"....INCORPORATE (a) events that have occurred at conditions other than at-power operation (i.e., during low power or shutdown conditions, **unless it is determined that an event is not applicable to at-power operation.** (b) events...."	ASME agrees with staff position	The staff maintains its position and proposed resolution
IE-B1	For the functional IE categories and quantification IE categories, as written, it is implied that two different groupings are performed. Therefore two different sets of accident sequences would be developed and quantified. In addition, the definitions provided are too limiting, other IE categories can exist for grouping.	"....in the Quantification element (para.4.5.8). ~~Functional initiating event categories refer to initiating events grouped for the purpose of accident sequence definition, while quantification initiating event categories refer to those grouped for separate quantification of the accident sequences.~~ When initiating events are not grouped ~~for either of these purposes~~, PROVIDE a separate accident-sequence evaluation for each selected initiating event."	ASME agrees with staff position	The staff maintains its position and proposed resolution
IE-C1	As written, there appears to be an internal inconsistency -- SR requires the "USE of the most recent data" then requires justification to exclude "data from the initial year of commercial operation. Further in IE-C5, SR requires justification of "exclusion of earlier years" It is not clear what is an acceptable justification for deviating from the standard, as such the requirement is too open ended.	"...USE the most recent applicable data to quantify the initiating event frequencies. **JUSTIFY excluded data that is not considered to be either recent or applicable (e.g., provide evidence via design or operational change that the data are no longer applicable).** CREDIT recovery actions*(see note)* as appropriate; JUSTIFY each such credit **(as evidenced, such as through procedures or training)**. ~~Data from the initial year of commercial operation may be excluded; if excluded, JUSTIFY.~~ **Note: these recovery actions are those implied in IE-C4(c) or those implied and discussed in IE-C6 through IE-C9."**	ASME agrees with staff position	The staff maintains its position and proposed resolution
IE-C5	It is not clear what is an acceptable justification for deviating from the standard, as such the requirement is too open ended. SR needs to be consistent with IE-C1	Cat III: "...JUSTIFY **excluded data that is not considered to be either recent or applicable (e.g., provide evidence via design or operational change that the data are no longer applicable)** ~~exclusion of earlier years that are not representative of current data~~. One acceptable methodology...."	ASME agrees with staff position	The staff maintains its position and proposed resolution

Table 3
NRC RESPONSE TO COMMENTS NOT ADDRESSED BY ASME

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment (Note 1)	NRC Position
IE-D1	It is not clear what is an acceptable justification for deviating from the standard, as such the requirement is too open ended.	"....(a) LIST and JUSTIFY **(by plant-specific or applicable generic analyses)** functional categories..."	ASME agrees with staff position	The staff maintains its position and proposed resolution
Table 4.5.2-1	HLR-AS-B is inconsistent with the HLR written for Table 4.5.2-2(b). The SRs in Table 4.5.2-2(b) are appropriate for the HLR as written for that table.	HLR-AS-B ~~Dependencies due to initiating events, human interface, functional dependencies, environmental and spatial impacts, and common cause failures shall be addressed.~~ **"Dependencies that can impact the ability of the mitigating systems to operate and function shall be addressed."**	ASME agrees with staff position	The staff maintains its position and proposed resolution
AS-B6	As written, there appears to be an implication that the list provided is complete.	"INCLUDE events for which time-phased dependencies might exist. **Examples are**:...."	ASME agrees with staff position	The staff maintains its position and proposed resolution
SC-B1	The meaning of "best-estimate" as used in this requirement does not agree with the definition in Section 2; in the SC-B1 context it is redundant with "realistic" and is not needed.	Cat II: "USE appropriate realistic ~~best-estimate~~ generic analyses/evaluations.....requiring detailed computer modeling. Realistic models or analyses may be supplemented..." Cat III: "USE ~~best-estimate~~ **realistic**, plant-specific models...."	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position.
SY-A8	Boundaries of a component must match the data.	"....MATCH the definitions used to establish the component failure data, ~~or JUSTIFY an alternative assumption~~. For example, if the pump failure data for the pump include control circuit failures, then the pump boundary must include the control circuitry. ...."	ASME agrees with staff position	The staff maintains its position and proposed resolution
SY-B1	For Cat I, as written, this implies more effort than probably intended by this requirement.	For Cat I: "MODEL intra-system common-cause failures when supported by generic or plant-specific data **(an acceptable model is the screening approach of NUREG/CR-5485, which is consistent with DA-D5)**, or SHOW that they do not impact the results."	ASME agrees with staff position	The staff maintains its position and proposed resolution

Table 3
NRC RESPONSE TO COMMENTS NOT ADDRESSED BY ASME

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment (Note 1)	NRC Position
HR-G4	For Cat II, plant-specific thermal-hydraulic analysis is required which seems inconsistent with SC-B1 that allows realistic but "similar plant" T-H for Cat II.	Cat II: **"BASE the time available to complete actions on appropriate, realistic generic thermal-hydraulic analyses, or simulations from similar plants (e.g., plant of similar design and operation). SPECIFY the point in time at which operators are expected to receive relevant indications.** Cat III: "BASE the time available to complete actions on plant-specific thermal-hydraulic analyses, or simulations SPECIFY the point in time at which operators are expected to receive relevant indications.	ASME agrees with staff position	The staff maintains its position and proposed resolution
DA-D1	For Cat I, as written, the requirements are not practical in that they are difficult if not impossible to meet. If the feature is unique, there may be little to no plant-specific data. For Cat II and III, as written, requirements appear to be inconsistent with Table 1.3-1 and IE-C2	Cat I: "USE plant-specific parameter estimates for **events modeling** the unique design or operational features **if available, or use generic information modified as discussed in DA-D2; USE** ~~with~~ generic information for the remaining events." Cat II: "CALCULATE realistic parameter estimates for dominant contributors**; if sufficient plant-specific data is not available, use** ~~using~~ a Bayesian update **process of generic industry data**. CHOOSE prior distributions as either non-informative, or representative of variability in industry data. CALCULATE ~~plant-specific~~ parameter estimates for the remaining events **by using generic industry** ~~plant-specific~~ data." Cat III: **"CALCULATE realistic parameter estimates; if sufficient plant-specific data is not available, use a Bayesian update process of generic industry data. CHOOSE prior distributions as either non-informative, or representative of variability in industry data."**	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position
IF-C5	Cat II and III: the SR already provides criteria, therefore, it is not clear what is an acceptable justification for an alternative; as such, the requirement is too open ended.	"....JUSTIFY any other qualitative screening criteria **(provide evidence that the qualitative alternative used is acceptable)**."	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position
IF-E5	Use of JUSTIFY is too open ended, particularly considering these are extraordinary recovery actions that are not proceduralized.	"...JUSTIFY the use of extraordinary recovery actions that are not proceduralized **(i.e., provide evidence of appropriate training that would ensure knowledge, skill of the craft)**.	ASME agrees with staff position	The staff maintains its position and proposed resolution

Table 3
NRC RESPONSE TO COMMENTS NOT ADDRESSED BY ASME

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment (Note 1)	NRC Position
QU-A2	The SR is incomplete, and as written, a point estimate may be quantified for CDF and LERF for Cat II and III.	Cat I: "ESTIMATE the ~~overall~~ **point estimate** from internal events. ~~QUANTIFY~~ **PROVIDE estimates of the** individual sequences **in a manner consistent with the estimation of total CDF** to identify dominant sequences....is appropriately reflected. The estimates may be accomplished by using....split fractions." Cat II: "ESTIMATE the ~~overall~~ **mean** CDF from internal events, **ensuring that the "state-of-knowledge" correlation between event probabilities is taken into account**. ~~QUANTIFY~~ **PROVIDE estimates of the** individual sequences **in a manner consistent with the estimation of total CDF** to identify dominant sequences....is appropriately reflected. The estimates may be accomplished by using....split fractions." Cat III: ~~ESTIMATE~~ **CALCULATE** the ~~overall~~ **mean** CDF from internal events **by propagating the uncertainty distributions, ensuring that the "state-of-knowledge" correlation between event probabilities is taken into account**. ~~QUANTIFY~~ **PROVIDE estimates of the** individual sequences **in a manner consistent with the estimation of total CDF** to identify dominant sequences....is appropriately reflected. The estimates may be accomplished by using....split fractions."	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position
QU-C1	Screening values as used in the Human Reliability Analysis section are values that, if shown not to contribute, may be retained in the model as is. QU-C1 is to perform an analysis using artificially high values for HEPs to identify those cutsets that contain multiple HFEs and are to be reviewed for dependency.	"IDENTIFY cutsets with multiple HFEs **by requantifying the PRA model with HEP values set to values that are sufficiently high that the cutsets are not truncated**. Avoid premature truncation....."	ASME agrees with staff position	The staff maintains its position and proposed resolution
QU-E3	For Cat II, the uncertainty intervals associated with parameter uncertainties are to be estimated taking into account the "state of knowledge" correlations.	Cat II: "ESTIMATE the uncertainty interval of the overall CDF results. ESTIMATE the uncertainty intervals associated with parameter uncertainties **taking into account the "state-of-knowledge" correlation.....**"	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position.

Table 3
NRC RESPONSE TO COMMENTS NOT ADDRESSED BY ASME

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment (Note 1)	NRC Position
QU-F3	Important assumptions and causes of uncertainty can significantly effect the decision-making when using results from any category and QU-F3 is inconsistent with QU-F1(l) for categories I and II.	Cat I and II: **"DOCUMENT important assumptions and causes of uncertainty, such as: possible optimistic or conservative success criteria, ... possible spatial dependencies, etc."** ~~No requirement to document important assumptions and causes of uncertainty.~~	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position
LE-C3	It is not clear what is an acceptable justification; as such, the requirement is too open ended	Cat II and III: "...PROVIDE technical justification **(by plant-specific or applicable generic calculations demonstrating the feasibility of the actions, scrubbing mechanisms, or beneficial failures)**..."	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position.
LE-C10	Modifiers in Cat I appear to eliminate the distinction between Cat I and II, and therefore, there is not a minimum in Cat I It is not clear what is an acceptable justification; as such, the requirement is too open ended.	Cat I: "...An acceptable treatment of containment bypass is in NUREG/CR-6595 [Note (1)]." ~~A realistic treatment may be used.~~ Cat II and III: "...JUSTIFY any credit taken for reducing the class of the release by scrubbing **(i.e., provide the source of the decontamination factor used)**."	ASME agrees with staff position	The staff maintains its position and proposed resolution
LE-F1	Inconsistent with QU-D5.	Cat I: "LIST the dominant contributors to LERF....REVIEW for reasonableness." Cat II and III: PERFORM an importance analysis .... to LERF."	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position
LE-F2	Inconsistent with QU-E	Cat III: **"PROVIDE uncertainty analysis which identifies the key sources of uncertainty and includes sensitivity studies."**	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position
Chapter 5				
5.5	The use of the word "should" does not provide a minimum requirement.	"....These changes **shall** ~~should~~ be addressed in a fashion..."	ASME agrees with staff position	The staff maintains its position and proposed resolution
Chapter 6				
6.3.5	The requirement, as written, is only for the reviewers to look at the HEPs and does not include the HFEs. Identification of the HFEs is a major part of the HRA, as indicated in Section 4.5.5.	**"(i) the selection and identification of the HFEs associated with the HEPs for the above review topics."**	ASME agrees with staff position	The staff maintains its position and proposed resolution; however, see Table 5 for complete NRC position

Table 3
NRC RESPONSE TO COMMENTS NOT ADDRESSED BY ASME

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment (Note 1)	NRC Position
6.5	See issue discussed on 5.4.	"The peer review team shall review the process, including implementation, for **maintaining or** upgrading the PRA against the configuration control requirements of this Standard."	ASME agrees with staff position	The staff agrees with CRNM and removes this clarification NRC position: no objection

Note 1: It was clarified at the CNRM meeting (March 24-26, 2003) that ASME agrees with the staff positions listed in this table and intends to revise the standard, per the staff proposed resolution, in an addendum.

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
Chapter 2				
Accident sequence	The definition provided is very general and does not distinguish the different types of accident sequences developed in a PRA. This distinction is necessary because some of the SRs are dependent on the accident sequence type.	*accident sequence*, **a representation in terms of an initiating event followed by a sequence of failures or successes of events (such as system, function, or operator performance) that can lead to undesired consequences, with a specified end state (e.g., core damage or large early release).** ~~A representation in terms of an initiating event followed by a combination of system, function, and operator failures or successes, of an accident that can lead to undesired consequences, with a specified end state (e.g., core damage or large early release). An accident sequence may contain many unique variations of events (minimal cut sets) that are similar.~~ ***accident sequence, class*, a grouping of accident sequences by initiator type (e.g., LOCA, LOSP) or by similar functional loss (e.g., station blackout, loss of decay heat).** ***accident sequence, functional*, the sequence of events are represented by the key safety functions necessary to mitigate the effects of the initiating event.** ***accident sequence, systemic*, the sequence of events are represented by the front-line systems necessary to mitigate the effects of the initiating event.** ***accident sequence, scenario*, the sequence of events are represented by the specific components or trains, support systems and operator actions necessary to mitigate the effects of the initiating event.**	Accept the definition of accident sequence. Reject the others. Except for the singular reference to classes of accident sequences in Paragraph 1.3, the other terms differentiating accident sequences are not used in the Standard. By policy, only those terms explicitly used in the Standard are defined. It is not considered necessary to define classes of accident sequences, because its usage in Section 1.3 is part of a generic discussion.	The term sequence is used throughout the standard. In many cases, the general definition is sufficient; however, it is not clear that the context is always the same where the general definition is sufficient. In the situation where, for example, sequence is specifically meant to be accident class, a functional accident sequence or an accident scenario, then this distinction needs to be made in the standard and the definitions will need to be added. The staff has not, at this time, determined which is the appropriate context, and had left this review to ASME. This item was discussed at the ASME CNRM subcommittee meeting, staff concern was acknowledged but no action assigned by ASME NRC position: The staff will provide this clarification in DG-1122 where necessary.

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
Accident sequence, dominant	The first part of the definition provides little value and may be inaccurate, a large fraction may be outside the stated range (i.e., smaller or larger than 10 to 20). In addition, it is not clear what is meant by large fraction. The term "dominant" is also used to modify other events such as contributors, human events. Several different terms (modifiers) are used in the standard. In some places, these modifiers are used interchangeably (to have the same meaning) and in other places, they are used to convey different meanings (e.g., used to distinguish whether a requirement is imposed). A common and specific quantitative understanding of these modifiers is necessary. Specifically, these modifiers include: important, significant and dominant.	~~*accident sequence, dominant*: an accident sequence that is usually represented by the top 10 or 20 events or groups of events modeled in a PRA and accounts for a large fraction of the core damage or large early release frequency.~~ ***dominant, significant, important, contributor*, an entity or entities (contributor(s) or event(s) such as failure of a specific piece(s) of equipment, human failure event(s), accident sequence(s)) that exercises the most influence or control to an outcome, and where each dominant entity has the ability to effect the second significant figure of the quantitative outcome** (i.e., x.***y***E-z).	While we agree with concern, the proposed merging of the meaning of these terms and use of a singular numerical discriminator is not appropriate. See discussion of **"Definitions and usage of dominant, significant, and important"** in the transmittal letter.	This item was discussed at a public meeting (January 9, 2003) and the staff agreed to review each usage of the terms and provide comment on each. The staff's updated position on both the definitions and usage of each term in the standard was presented at a public meeting on March 11, 2003. Table 5 provides the staff's position which includes the resolution discussed at the March 11 public meeting. There was insufficient time to discuss the staff position at the ASME CNRM subcommittee meeting. ASME intends to review the staff position.

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
Recovery	See SY-A23 and HR-H1	See NRC response to SY-A23 and HR-H1	See SY-A23 and HR-H1	~~a general term describing restoration and repair acts required to change the initial or current state of a system or component into a position or condition needed to accomplish **of** a desired function for a given plant state~~ **a PRA modeling term representing restoration of the function caused by a failed SSC by bypassing the failure. Such a recovery can be modeled using HRA techniques regardless of the cause of the failure.**
Repair	See SY-A23 and HR-H1	See NRC response to SY-A23 and HR-H1	See SY-A23 and HR-H1	**a general term describing restoration of a failed SSC by correcting the failure and returning the failed SSC to operability. HRA techniques cannot be used since the method of repair is not known without knowing the specific cause.**
Chapter 4				
4.5	The standard provides SRs for different PRA capabilities, but there is no requirement for the PRA to identify which capability category is met for each SR.	"... a PRA will meet that HLR. **The capability category that has been met for each SR shall be identified and documented.** Boldface is used....in the three Capability Categories."	Disagree. This requirement is adequately addressed in Section 3.4 and 3.5. See discussion in the transmittal letter.	This issue is addressed to some extent in Section 3.5 (not discussed in 3.4). However, to minimize staff review of an application, the Capability Category associated with applicable SRs is essential. See NRC response to #6.6.1. NRC position: no objection

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
IE-A6	As written, there is an implication that more work is needed for Cat II than for Cat III, since it is not clear whether the interviews from other plants are to be used instead of or as a complement to plant specific interviews. However, interviews from other plants would appear to be more resource intensive.	Cat II: "INTERVIEW plant operations, ... to determine if potential initiating event have been overlooked." ~~Information from interviews conducted at similar plants may be used~~.	Disagree with interpretation but agree that intent is not clear. The intent was to allow use of interviews from other plants INSTEAD OF rather than IN ADDITION TO. Therefore, propose adding at end of last sentence: "[used **in lieu of plant-specific interviews.**"	Disagree with CNRM. The intent of Capability Category II is to be plant-specific, for at least the parts of the PRA contributing to the results, and to use good industry practice. The use of interviews from other plants does not support the objective of Cat II. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: Cat II: "INTERVIEW plant **personnel (e.g.,** operations, ... safety analysis personnel**)** to determine if potential initiating event have been overlooked." ~~Information from interviews conducted at similar plants may be used~~.
AS-A9	This SR appears to be redundant with SRs in SC; effects other than environmental are addressed by the requirements under success criteria.	Cat I, II and III: "...thermal-hydraulic analyses to determine ~~accident progression parameters (e.g., timing, temperature, pressure, steam)~~ **the environmental effects (e.g., temperature, pressure, steam) during the accident progression** that could potentially affect the operability of the mitigating systems."	Disagree that focus of this SR should be environmental; this changes the meaning. No change at this time.	The staff maintains that this SR is environmental, but original words encompass environmental. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: no objection
SY-A19	If there are not any engineering analyses, there can be no justification for the assumption.	Cat I and II: "...If engineering analyses are not available, ASSUME that the equipment/system fails with a probability of 1.0 ~~or JUSTIFY the assumed failure probability~~.	Disagree. Do not always need a formal analysis to determine that there is a reasonable likelihood of success.	The staff has not interpreted "engineering analyses" as a formal calculation. An engineering analyses can be a qualitative assessment or a bounding analysis. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC Position: Cat I and II: "...If ~~engineering analyses~~ **a basis for success (e.g., formal calculation, bounding analysis, qualitative argument) is is** not available, ASSUME that the equipment/system fails with a probability of 1.0. ~~or JUSTIFY the assumed failure probability~~.

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
SY-A23	There are no commonly used analysis methods for recovery in the sense of repair, other than use of actuarial data.	"....is justified through an adequate ~~recovery analysis or~~ examination of data **collected in accordance with DA-C14."** ~~(See DA-C14.)~~	Disagree. Requirement for actuarial data is too stringent; providing an adequate basis, perhaps plant-specific experience or common practice should be acceptable.	Disagree. The nature of the fault (what needs to be repaired, i.e., what specific human actions need to be performed), which is unknown, is needed for repair to be assessed with HRA techniques. Consequently, while repair may be credited in the PRA, determination of the credit (failure probability, not HEP) is not performed using HRA techniques. The failure probability is assessed by examination of data, both plant-specific and industry. Generally, plant-specific data is very sparse and insufficient, and therefore, industry data also needs to be considered. This SR also needs to reference a data SR to address the estimation of repair failure probabilities, DA-C14 is not sufficient, it only addresses collection. HLR-DA-D deals with parameter estimation. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. See definitions for recovery and repair. It is was noted that the disagreement was a language problem and not a technical disagreement. NRC position: "....is justified through an adequate ~~recovery analysis or~~ examination of data **collected in accordance with DA-C14 and estimated in accordance with DA-D8."** ~~(See DA-C14.)~~

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
SY-B11	It is not clear what is an acceptable justification for deviating from the standard; as such, the requirement is too open ended.	Cat I: "....MODEL them unless a justification is provided **(i.e., that is unique to the system and highly reliable)**. In the model quantification...."	The intended meaning of the suggested parenthetical insert is unclear. Request additional clarification.	Additional clarification is provided. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. With the additional clarification, NRC's position was acknowledged. NRC position: Cat I: " MODEL them unless a justification is provided **(e.g., the initiation and actuation system can be argued to be highly reliable and is only used for that system, so that there are no inter-system dependencies arising from failure of the initiation system)**. In the model quantification..."
HR-G7	see HR-H2	See NRC response to HR-H2	see HR-H2	This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. See HR-H2 NRC position: "....common procedures, increases stress, etc.) **(c) availability of resources (e.g., personnel accounting for time of day)"**

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
HR-G8	It is not clear what is an acceptable justification; as such, the requirement is too open ended.	"DEFINE and JUSTIFY **(provide evidence that there are not any dependencies, e.g., shaping factors, management, among the human failure events such that cutsets were inappropriately truncated)** the minimum probability...."	Disagree. Suggest the following words to replace words added in parentheses: "DEFINE and JUSTIFY **(accounting for the dependencies identified in supporting requirement HR-G7)** the minimum probability..." Note, if there is concern that there will be premature truncation of cutsets with multiple HFEs, then it is noted that supporting requirements (SRs) QU-C1 and QU-C2 deal with that issue. Also, propose adding reference to HR-G8 in SR Qu-C2.	The staff believes the intent of this SR is to provide a minimum probability for the product of HEPs in a sequence, regardless of whether they have been argued to be independent. Such a minimum represents the hidden sources of dependency arising from, for example, major organizational failures. It is unreasonable to introduce a series of operator actions to drive down the frequency of a sequence to very low numbers. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC's concern better addressed in HR-I1. NRC position: "DEFINE ~~and JUSTIFY~~ the minimum probability..."
HR-H1	To be consistent with HR-H2 and HR-H3, it is necessary that this SR clearly indicate that recovery does not include repair, which is dealt with actuarially, not by modeling via human reliability analysis.	Cat I and II: "INCLUDE....the dominant sequences. **Recovery actions are limited to those to which HRA techniques can be applied, such as system reconfiguration, or simple actions such as manually opening or closing a failed valve, but not repair."** Cat III: "INCLUDE.....components. **Recovery actions are limited to those to which HRA techniques can be applied, such as system reconfiguration, or simple actions such as manually opening or closing a failed valve, but not repair."**	Disagree with the concept that "repair" could not be included as a recovery action. However, if repair of equipment is to be considered justified, then an adequate recovery analysis (e.g., one that considers equipment availability, repair procedure availability, adequate time available, environmental conditions appropriate to allow repair) must be performed. Propose to add words similar to discussion for SR LE-C2.	It is not the Staff's intention that consideration of repair is not acceptable as a recovery. However, repair is not typically addressed using HRA techniques. The qualifier is associated with the observation that SLR HR-H3, and to a large extent, HR-H2, make sense in the context of HRA. See also NRC response to SY-A23 and NRC definition in Section 2 of this table. NRC position: See attached Table 5 for complete NRC position.

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
HR-H2	The criteria provided for crediting recovery actions are incomplete; there are other factors equally important that are to be addressed before credit can be allowed. As written, there is no requirement to justify multiple recovery actions which can result in inaccurate and misleading results.	***QUALIFICATION —*** "....skill of the craft exist **(c) attention is given to the relevant performance shaping factors provided in HR-G3** **(d) there is sufficient manpower to perform the action.** **If credit is taken for multiple operator recovery actions ENSURE that it has been determined that the appropriate manpower is available, taking into account such things as the fluctuating manpower with time of the day."**	Agree to accept two additional conditions (e.g., (c) and (d)). However, do not agree to include the paragraph after items (c) and (d), i.e., beginning with "~~If credit is taken...~~" In lieu of adding this paragraph, the words "**availability of personnel"** are proposed to be added to the list in SR HR-G7.	The staff agrees with the CRNM proposed change to the Standard, including the suggested addition to HR-G7. However, the staff continues to believe that the paragraph beginning "if credit is .." is needed, and will not be covered by the change to HR-G7. Most post-initiator actions are performed by control-room personnel, whereas recovery actions may be performed by personnel other than control room personnel. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. See also HR-G7 and HR-H3 for complete resolution. NRC position: "....skill of the craft exist **(c) attention is given to the relevant performance shaping factors provided in HR-G3** **(d) there is sufficient manpower to perform the action."**
HR-H3	see HR-H2	see NRC response to HR-H2	see HR-H2	This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. See HR-H2 NRC position: "....or cutset to which the recovery is applied. **These dependencies include:** **(a) the time required to complete all actions in relation to the time available to perform the actions** **(b) factors that could lead to dependence (e.g., common instrumentation, common procedures, increases stress, etc.)** **(c) availability of resources (e.g., personnel accounting for time of day)"**

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
HR-I1	See HR-G8	see NRC response to HR-G8	see HR-G8	This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. See HR-G8 NRC position: See attached Table 5 for complete NRC position.
DA-C14	This SR, which provides a justification for crediting equipment repair, assumes plant-specific data will be sufficient to justify this credit. For such components as pump repair, plant-specific data is insufficient and a broader base is necessary.	"IDENTIFY instances of ~~plant-specific~~ component repair from **both plant-specific and industry experience** and for each repair, COLLECT...."	Agree with modification in principle. Propose changing the words from "~~both plant-specific and industry experience~~" to "~~both~~ **plant-specific** ~~and~~ **or applicable industry experience.**" It is not appropriate to require use of both sets of data for each repair.	See NRC response to SY-A23 NRC position: "IDENTIFY instances of ~~plant-specific~~ component repair from **both plant-specific and industry experience** and for each repair, COLLECT...."

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
DA-D3	For Cat II, a mean value is required for CDF and LERF; assigning mean values only to events that "contribute measurably" can result in combining events where some have mean values and some are point estimates, which does not result in a mean CDF or LERF. Cat II and III, as written, a mean value of the uncertainty intervals is required, which is incorrect (caused by incorrect comma after 'representation of').	Cat II: "PROVIDE a mean value of, and a statistical representation of the uncertainty intervals for, the parameter estimates that contribute measurably to CDF and LERF. **The parameter estimates that contribute measurably are those events that are retained in the sequences that survive truncation in the final quantification of CDF and LERF**. Acceptable systematic methods include Bayesian updating, frequentist method, or expert judgment." Cat III: "PROVIDE a mean value of, and a statistical representation of the uncertainty intervals for**,** the parameter estimates. Acceptable systematic methods include Bayesian updating, frequentist method, or expert judgment."	The comma change for both Capability Categories II and III is acceptable. However, the pseudo-definition for "contribute measurably" is rejected. As written, "contribute measurably" would include "everything." This will be reviewed after resolution of the terms dominant, significant and important.	This item was discussed at the ASME CNRM subcommittee meeting with no resolution proposed. NRC maintains its position. NRC position: See attached Tabl e 5 for complete NRC position
Table 4.5.8-1	HLR-QU-A and Table 4.5.8-2(a) objective statement just before table: These objective statements do not exactly agree.	HLR-QU-A: "...core damage frequency **and shall support the quantification of LERF**."	Disagree. Suggest that the words "~~...and support the quantification of LERF.~~" be deleted from HLR-QU-A. By policy, all LERF considerations are with the LERF element.	All LERF considerations are not with the LERF element. In several places, the reader is referred to the SRs in 4.5.8 for the necessary quantification SRs for LERF; consequently, it is appropriate to reference LERF in the HLR. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. With the additional clarification, NRC's position was acknowledged. NRC position: HLR-QU-A: "...core damage frequency **and shall support the quantification of LERF**."

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
LE-B2	The modifiers (e.g., may, possible) in Cat I, II, and III appear to eliminate the distinction between Category I, II, and III, and do not provide a minimum in Cat I or II.	Cat I: "...An acceptable alternative is the approach in NUREG/CR-6595 [Note (1)]." ~~Realistics loads may be used when available.~~ Cat II: USE containment loads....that are realistic ~~when possible~~ for significant challenges to containment. Conservative treatment ~~may be~~ ***is*** used for non-dominant LERF contributors. Cat III: USE containment loads....that are realistic ~~when possible~~ for ~~significant~~ challenges to containment.	Agree with comment, except that for Category II, delete the sentence beginning "~~Conservative treatment...~~" Use of alternate, conservative treatment for other loads is implied by the preceding sentence.	Disagree that the use of conservative treatment is implied. For the non-dominant, realistic or non-conservative treatment, for example, could be used. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: See attached Table 5 for complete NRC position
LE-C2	It is not clear what is an acceptable justification; as such, the requirement is too open ended. Credit for equipment repair is to be consistent with the Level 1 requirements.	Cat II and III: "...Repair of equipment may be considered if ~~appropriate justified~~ **it can be established that the plant conditions do not preclude repair and actuarial data exists from which to estimate the repair failure probability."**	Disagree with the requirements for actuarial data. Propose the following change: "Repair of equipment may be considered **if justified through an adequate recovery analysis (e.g., one that considers equipment availability, repair procedure availability, adequate time available, environmental conditions appropriate to allow repair)**."	See NRC response to SY-A23 NRC position: Cat II and III: "...Repair of equipment may be considered if ~~appropriate justified~~ **it can be established that the plant conditions do not preclude repair and actuarial data exists from which to estimate the repair failure probability (see SY-A23, DA-C14 and DA-D8)."**
LE-C4	The modifiers (e.g., may, possible) in Cat I, II and III appear to eliminate the distinction between Category I, II and III, and do not provide a minimum in Cat I or II.	Cat I: "USE conservative system success criteria." ~~Realistic criteria may be used.~~ Cat II: "....Conservative system success criteria ~~may be~~ **is** used for non-dominant LERF contributors."	Suggested changes are not quite consistent with changes suggested for LE-B2, Le-C8 and LE-C9. Cat I: Comment acceptable Cat II: "USE realistic system success criteria **for dominant LERF contributors**" Delete the sentence beginning "~~Conservative system success~~"	Disagree that the use of conservative treatment is implied. For the non-dominant, realistic or non-conservative treatment, for example, could be used. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: See attached Table 5 for complete NRC position

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
LE-C8	The modifiers (e.g., may, possible) in Cat I, II and III appear to eliminate the distinction between Category I, II and III, and do not provide a minimum in Cat I or II.	Cat I: "...An acceptable alternative is the approach in NUREG/CR-6595 [Note (1)]." ~~A realistic treatment may be used.~~ Cat II: "....in a realistic manner ~~when possible~~. Conservative treatment ~~may be~~ ***is*** used for non-dominant LERF contributors. Cat III: "TREAT .... in a realistic manner" ~~when possible~~.	Cat I: Comment acceptable Cat II: "TREAT containment environmental impacts...in a realistic manner for dominant LERF contributors." Delete the sentence beginning "~~Conservative system success~~" Cat III: comment acceptable	Disagree that the use of conservative treatment is implied. For the non-dominant, realistic or non-conservative treatment, for example, could be used. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: See attached Table 5 for complete NRC position
LE-C9	The modifiers (e.g., may, possible) in Cat I, II and III appear to eliminate the distinction between Category I, II and III, and do not provide a minimum in Cat I or II.	Cat I: "...An acceptable alternative is the approach in NUREG/CR-6595 [Note (1)]." ~~A realistic treatment may be used.~~ Cat II: "....in a realistic manner ~~when possible~~. Conservative treatment ~~may be~~ **is** used for non-dominant LERF contributors. Cat III: "TREAT .... in a realistic manner" ~~when possible~~.	Cat I: Comment acceptable Cat II: "TREAT containment failure impacts...in a realistic manner for dominant LERF contributors." Delete the sentence beginning "~~Conservative system success~~" Cat III: comment acceptable	Disagree that the use of conservative treatment is implied. For the non-dominant, realistic or non-conservative treatment, for example, could be used. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: See attached Table 5 for complete NRC position
LE-D1	It is not clear what is an acceptable justification; as such, the requirement is too open ended. The 'may' term in Cat I and II appears to eliminate the distinction between Cat I and II, and does not provide a minimum in Cat I or II.	Cat I: "....USE a conservative evaluation of containment capacity for dominant containment failure modes. ~~A realistic evaluation may be used.~~..... EVALUATE impact of ..... vent pipe bellows, **and** INCLUDE ~~in~~ **as potential** failure modes, as required..... Such considerations ~~may~~ need to be included for small volume containments...."	Cat I: Comment acceptable Cat II: do not accept the sentence beginning "~~Conservative system success~~" Cat III: delete the word "~~dominant~~" in the first two sentences	Disagree that the use of conservative treatment is implied. For the non-dominant, realistic or non-conservative treatment, for example, could be used. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: See attached Table 5 for complete NRC position

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
		Cat II: "...PERFORM a realistic containment capacity analysis for dominant containment failure modes. ~~The analysis may include some conservative parameters~~ **USE a conservative evaluation of containment capacity for non-dominant containment failure modes.** EVALUATE impact of ..... vent pipe bellows, **and** INCLUDE ~~in~~ **as potential** failure modes, as required.... JUSTIFY applicability to the plant being evaluated. **Analyses may consider use of similar containment designs or estimating containment capacity based on design pressure and a realistic multiplier relating containment design pressure and median ultimate failure pressure.** Quasi-static containment capability evaluations .... Such considerations ~~may~~ need to be included for small volume containments...."		
LE-D2	It is not clear what is an acceptable justification; as such, the requirement is too open ended.	Cat I: "...JUSTIFY applicability of generic and other analyses. **Analyses may consider conservative comparison with similar failure locations in similar containment designs.** An acceptable alternative...."	Accept comment, except in Cat I, and delete "~~conservative~~" in the added wording	The staff agrees NRC position: Cat I: "...JUSTIFY applicability of generic and other analyses. **Analyses may consider comparison with similar failure locations in similar containment designs.** An acceptable alternative...." See attached Table 5 for complete NRC position

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
LE-D3	Stating a "realistic evaluation is acceptable" in Cat I appears to eliminate the distinction between Cat I and II, and does not provide a minimum in Cat I. It is not clear what is an acceptable justification; as such, the requirement is too open ended.	Cat I: "USE a conservative evaluation of interfacing system failure probability for ~~dominant~~ failure modes. ~~A realistic evaluation is acceptable.~~ IF generic analyses generated for similar plants are used, JUSTIFY applicability to the plant being evaluated. **Analyses may consider conservative comparison with similar interfacing systems in similar containment designs."** Cat II: "PERFORM a **realistic** interfacing system failure probability analysis for dominant failure modes. Evaluation .... may include conservatisms. **USE a conservative evaluation of interfacing system failure probability for non-dominant failure modes**..... JUSTIFY applicability to the plant being evaluated. **Analyses may consider realistic comparison with similar interfacing systems in similar containment designs** Cat III: "PERFORM a realistic interfacing system failure probability analysis for ~~dominant~~ the failure modes.....	Cat I: accept comment, but delet "~~conservative~~" in the added wording Cat II: in first sentence, add "~~significant~~ "**realistic**" as suggested and add at end of first sentence "**for dominant failure modes**" and delete the second sentence. Do not accept "~~Use a conservative evaluation...~~" Delete "~~realistic~~" before "**comparison**" in the last sentence. Accept remainder of comment. Cat III: accept comment	Disagree that the use of conservative treatment is implied. For the non-dominant, realistic or non-conservative treatment, for example, could be used. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: See attached Table 5 for complete NRC position

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
LE-D4	The 'may' term in Cat I appears to eliminate the distinction between Cat I and II, and does not provide a minimum in Cat I. It is not clear what is an acceptable justification; as such the requirement is too open ended.	Cat I: "USE a conservative evaluation of secondary side isolation capability for ~~dominant~~ SG tube failure modes. ~~A realistic evaluation may be used.~~ IF generic analyses generated for similar plants are used, JUSTIFY applicability to the plant being evaluated. **Analyses may consider conservative comparison with similar isolation capability in similar containment designs."** Cat II: "PERFORM a **realistic** secondary side isolation capability analysis for dominant SG tube failure modes. Evaluation .... may include conservatisms. **USE a conservative evaluation of secondary side isolation capability for non-dominant SG tube failure modes.**.... JUSTIFY applicability to the plant being evaluated. **Analyses may consider realistic comparison with similar isolation capability in similar containment designs"** Cat III: "PERFORM a realistic secondary side isolation capability analysis for ~~dominant~~ SG tube failure modes..."	Cat I: accept comment, but delete "~~conservative~~" in the added wording Cat II: same as LE-D3 resolution Cat III: accept comment	Disagree that the use of conservative treatment is implied. For the non-dominant, realistic or non-conservative treatment, for example, could be used. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: See attached Table 5 for complete NRC position
LE-D6	The 'may' term in Cat I appears to eliminate the distinction between Cat I and II, and does not provide a minimum in Cat I.	Cat I: "TREAT containment isolation in a conservative manner." ~~A realistic treatment may be used.~~ Cat II: "TREAT containment isolation in a realistic manner **for dominant contributors**. Conservative treatment **is** ~~may be~~ used for non-dominant contributors.	Cat I: accept comment Cat II: delete sentence "~~Conservative parameter estimates...~~"	Disagree that the use of conservative treatment is implied. For the non-dominant, realistic or non-conservative treatment, for example, could be used. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: See attached Table 5 for complete NRC position

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
LE-E2	Modifiers in Cat II appears to eliminate the distinction between Cat II and III, and therefore, there is not a minimum in Cat II.	Cat II: "USE realistic parameter estimates ~~when possible~~ for dominant LERF sequences. **Conservative parameter estimates are used for non-dominant LERF sequences.**" Cat III: "USE realistic parameter estimates ~~when possible~~."	Cat II: accept comment, but delete sentence "~~Conservative parameter estimates.~~."	Disagree that the use of conservative treatment is implied. For the non-dominant, realistic or non-conservative treatment, for example, could be used. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC position: See attached Table 5 for complete NRC position
Chapter 5				
5.4	As a PRA is maintained, it may go through changes such that the results are significantly impacted (e.g., very different contributors, order magnitude change in CDF).	3rd para: "Changes to a PRA due to PRA maintenance **and PRA upgrade (where applicable**) shall meet the requirements of Section 4. **Prior to an application, if the changes have significantly impacted the PRA results, the maintained PRA shall receive a peer review and which satisfy the peer review requirements specified in Section 6, but limited to aspects of the PRA that have been maintained**. Upgrades of a PRA **shall receive a peer review and** shall satisfy the peer review requirements specified in Section 6, but limited to aspects of the PRA that have been upgraded."	Agree to add "**and PRA upgrade**" in the first sentence of this paragraph, but disagree with other additions. Maintenance should not require peer review. See discussion in transmittal letter.	Agree with CRNM. This item was discussed at the ASME CNRM subcommittee meeting. NRC's position reflects the resolution proposed at the meeting. NRC Position: See attached Table 5 for complete NRC position
5.8 (e)	It is unclear what is to be documented from the peer review.	"(e) record of the performance and results of the appropriated PRA reviews **(consistent with the requirements of Section 6.6)**"	Disagree. Documentation of Peer Review is covered in Section 6.	Disagree, simply a cross-reference that adds clarity. NRC Position: "(e) record of the performance and results of the appropriated PRA reviews **(consistent with the requirements of Section 6.6)**"

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
Chapter 6				
6.1	The purpose, as written, implies that it is solely an audit against the requirements of Section 4. A key objective of the peer review is to ensure when evaluating the PRA against the requirements in Section 4, the "quality" (i.e., strengths and weaknesses) of the PRA; this goal is to be clearly understood by the peer review team.	"...The peer review shall assess the PRA to the extent necessary to determine if the methodology and its implementation meet the requirements of this Standard **to determine the strengths and weaknesses in the PRA. Therefore, the peer review shall also assess the appropriateness of the significant assumptions.** The peer review need not assess..."	Agree to add phrase "to determine the strengths and weaknesses in the PRA." However, disagree with addition of the following sentence: "Therefore, the peer review shall also assess the appropriateness of the significant assumptions." The term significant as used qualitatively in the standard encompasses a substantial volume of assumptions and determinations. The scope of this added requirement is undefined and could be well beyond the scope of a peer review. As stated in 6.1 Purpose: "The peer review shall assess the PRA to the extent necessary to determine if the methodology and its implementation meet the requirements of this Standard. The peer review need not assess all aspects of the PRA against all Section 4 requirements; however, enough aspects of the PRA shall be reviewed for the reviewers to achieve consensus on the adequacy of methodologies and their implementation for each PRA element. Essentially all PRA Element requirements in Section 4 include the need to document important or key assumptions and 6.3, paragraph 2 states: "The results of the overall PRA, including models and assumptions,..." Therefore, it is not considered necessary to add a statement that could be interpreted as requiring a review of all "significant," "important," or "key" assumptions documented in the PRA.	As the staff noted before, a key objective of the peer review is to determine the strengths and weaknesses of the PRA. This objective can not be met if the peer review does not assess, at least, the key (or significant) assumptions. These key assumptions are those that have the ability to change the results such that the contributors are different, the risk profile is considerably different, etc. The requirement to document the assumptions is not the same as requiring the peer review team to assess the appropriateness of the key assumptions. The statement in 6.1 on purpose is too broad and open ended. This item was discussed at the ASME CNRM subcommittee meeting. ASME agreed to supply list of the typical types or assumptions of interest for consideration to be in the standard. NRC position: See attached Table 5 for complete NRC position
6.1.1	See issue discussed on 5.4.	"....When peer reviews are conducted on **PRA maintenance** or PRA upgrades, the latest review shall be considered the review of record...."	Disagree. Maintenance should not require peer review. See discussion in transmittal letter	Agree with CNRM NRC position: no objection

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
6.2.3	See issue discussed on 5.4. As written, it appears that the last paragraph could allow a team to be composed of a single member.	5th para: "...such as a review of a **maintenance or** upgrade of a PRA element,..." 6th para: "Exceptions to the requirements of this paragraph may be taken based on the availability of appropriate personnel to develop a team *(where a team is a group of several individuals).* All such exceptions shall be documented in accordance with para. 6.6 of this Standard."	Disagree with proposed chagnes in 5th paragraph, see 5.4 Disagree with change in 6th paragraph. Typical dictionary definitions identify a "team" as more than one person. The recommended change could be misinterpreted to allow a single person team.	5th para: agree with CNRM NRC position: no objection 6th para: disagree, there are many instances where there are "single person teams." The added exception opens the door for smaller teams, up to a single person. Agree that the parenthetical could be misinterpreted. This item was discussed at the ASME CNRM subcommittee meeting. Agree that restriction applies only to the base peer review. NRC position: "Exceptions to the requirements of this paragraph may be taken based on the availability of appropriate personnel to develop a team *(only for the peer review of a PRA upgrade could a single individual team be justified).* All such exceptions shall be documented in accordance with para. 6.6 of this Standard."

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
6.3	As written, there does not appear to be a minimum set. The requirement as written provides "suggestions." A minimal set of items is to be provided; the peer reviewers have flexibility in deciding on the scope and level of detail for each of the minimal items.	1st para: "The peer review team shall use the requirements..... of this Standard. **For each PRA element, a set of review topics required for the peer review team are provided in the subparagraphs of para. 6.3.** ~~Some subparagraphs of para. 6.3 contain specific suggestions for the review team to consider during the review.~~ Additional material for those Elements may be reviewed depending on the results obtained. The judgment of the reviewer shall be used to determine the specific scope and depth of ~~the review in~~ **each review topic for** each PRA element."	Disagree. The intent is clearly stated in the 5th sentence "The suggestions are not intended to be a minimum..." Peer Review teams must be allowed to select the scope and level of detail for the review and not be bound by prescriptive requirements. A Peer Review is not an Audit.	Disagree,a standard provides a minimum list which does not have to be prescriptive and can still allow flexibility to the peer review on scope and depth. There is a minimum set that the Peer Review must review and needs to be stated. The standard, as written, the peer reviewer may ignore any of the "suggestions" and allows complete and absolute judgment to the peer reviewer which is also unacceptable considering there is not a single team performing all the peer reviews. This item was discussed at the ASME CNRM subcommittee meeting. The staff maintains its position. NRC position: "The peer review team shall use the requirements..... of this Standard. **For each PRA element, a set of review topics required for the peer review team are provided in the subparagraphs of para. 6.3.** ~~Some subparagraphs of para. 6.3 contain specific suggestions for the review team to consider during the review.~~ Additional material for those Elements may be reviewed depending on the results obtained. ~~These suggestions are not intended to be a minimum or comprehensive list of requirements.~~ The judgment of the reviewer shall be used to determine the specific scope and depth ~~of the review in each~~ **of each review topic for each** PRA element."

Table 4
NRC RESPONSE TO ASME COMMENTS IN DISAGREEMENT WITH NRC POSITION

Index No	NRC Issue	NRC Proposed Resolution in DG-1122	CNRM Comment	NRC Response
6.3.6 (a)	As written, it does not appear that review of the data values would include the defined boundary for the component, which is an essential aspect of the review. It is not clear that "contributing" would include components, if degraded would have a significant impact.	"(a) data values **and the defined component boundary** for component failure modes contributing to the CDF or LERF **(including active components with high RAW values)** calculated in the PRA"	Accept first part in principle. Will add: "**(including component boundary definitions)**" in first sentence Disagree with second insert ~~(including active components with high RAW values)~~. The standard does not require determination of RAW values for components during development of a PRA; therefore, the Peer Review Team may not have this information available for review.	Disagree, the standard in QU-D5 and LE-F1 does require this information, and therefore, can be requested by the peer review team. This item was discussed at the ASME CNRM subcommittee meeting. The staff maintains its position. NRC position: "(a) data values **and the defined component boundary** for component failure modes contributing to the CDF or LERF **(including active components with high RAW values)** calculated in the PRA"
6.6.1	As written, It is not clear whether certain essential items are included in the documentation requirements that are necessary to accomplish the goal of the peer review.	**"(j) identification of the strengths and weaknesses that have a significant impact on the PRA** **(k) assessment (e.g., significance) of the assumptions playing a key role in the PRA results** **(l) confirmation of the capability categories noted in the PRA for each SR from Section 4.5 of the Standard."**	Accept (j) Accept a modified (k) "**assessment of assumptions that have a significant impact on the PRA results**" Reject (l) See discussion on Item 4.5 and in the transmittal letter. In both cases, it is assumed that usage of the word "significant in this context does not imply a strict numerical test and the term might be changed to "important" or "key" after resolution of the definition issue discussed in the letter.	Revisited (k) based on public meeting discussion (March 11, 2003). Disagree with deleting (l), since knowing the capability category is an important part of determining the capability of a PRA to support an application. NRC position: "**(j) identification of the strengths and weaknesses that have a significant impact on the PRA** **(k) assessment of the key assumptions** **(l) an assessment of the capability category of the SRs (or equivalent Peer Review grade)**"

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant and Staff Clarifications on LERF

Definitions, Section 2 — Staff clarifications on definitions; note: numerical values are suggestions that are compatible with current PRA practice. These definitions have been discussed with the ASME CNRM subcommittee in a series of conference calls. The definitions do not reflect resolution between ASME and the staff.

NRC Position —

Significant sequence:
A significant sequence is one of the set of sequences, defined at the functional or systemic level that, when ranked, comprise 95% of the core damage frequency (CDF) or the large early release frequency (LERF), OR that individually contribute more than ~1% to the CDF or LERF.

Significant cutset (relative to CDF):
Those cutsets, when ranked, comprise 95% of the CDF OR that individually contribute more than 1% to CDF.

Significant cutset (relative to sequence):
Those cutsets, when ranked, comprise 95% of the sequence CDF OR that individually contribute more than 1% to the sequence CDF.

Significant basic event:
Those basic events (i.e., equipment unavailabilities and human failure events) that have a fussell-vesely importance greater than 0.005 OR a risk-achievement greater than 2.

Significant containment challenges:
Those containment challenges that contribute to the set of significant accident progression sequences.

Significant contributor (e.g., containment failure mode, phenomena):
A contributor which is an essential characteristic of a significant accident progression sequence, and if not included, the sequence would be insignificant.

Key source of uncertainty:
A source of uncertainty that is related to an issue where there is no consensus approach or model (e.g., choice of data source, success criteria, RCP seal LOCA model, human reliability model) and where the choice of approach or model is known to have an impact on the determination of PRA results in terms of introducing new accident sequences, changing the relative importance of sequences, or affecting the overall CDF or LERF estimates that might have an impact on the use of the PRA in decision-making.

Key Assumption:
An assumption made in response to a key source of uncertainty, or one that is made for modeling convenience, in the knowledge that a more detailed model would produce different results; that is, different in terms of significant sequences, relative importance of significant sequences, or estimates of CDF/LERF (e.g., assumption that system X has the same impact as system Y for systems with different capabilities).

Severe accident phenomena:
The phenomena (e.g., hydrogen combustion) that occurs during the accident (core melt) progression.

Containment challenge:
Those phenomena, equipment failures, and human failure events that have the potential to threaten or bypass the containment pressure boundary.

Containment failure mode:
The different end states (e.g., early liner melt-through) of the accident progression sequences modeled in the containment event tree (or equivalent structure) that lead to a radionuclide release.

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
1.3	"This Standard is intended...that determine the risk ***significance*** of the proposed changes."	"This Standard is intended...that determine the ~~risk~~ significance of the proposed changes."
Tbl 1.3-1 Criteria 1	**Cat I:** ...relative ***importance*** of the contributors... **Cat II**: ...relative ***importance*** of the ***dominant*** contributors... **Cat III:** ...relative ***importance*** of the contributors...	Cat I: ...relative importance of the contributors... Cat II: ...relative importance of the **significant** ~~dominant~~ contributors... Cat III: ...relative importance of the contributors...
Tbl 1.3-1 Criteria 2	Cat II: Use of plant-specific data/models for the ***dominant*** contributors	Cat II: Use of plant-specific data/models for the ~~dominant~~ **significant** contributors.
2.2 core damage	...enough of the core to cause a ***significant*** release.	....enough of the core, if released, to result in offsite public health effects~~ to cause a significant release~~.
2.2 PRA upgrade	the incorporation into a PRA model of a new methodology or ***significant*** changes in scope or capability....	The incorporation into a PRA model of a new methodology or ~~significant~~ changes in scope or capability **that have the potential to impact the significant sequences**
2.2 Resource expert	A technical expert with knowledge of a particular technical areas of ***importance*** to a PRA	A technical expert with knowledge of a particular technical area~~s~~ of ~~importance to~~ a PRA
2.2 screening analysis	...contribution to the probability of a ***significant*** accident or its consequences	...contribution to the probability of ~~a significant~~ an accident **sequence** or its consequences
3.3.1	.... It is determined that the changes in maintenance unavailability are too small to consider ***significant*** impacts on the reliability of SW pumps that could impact a wider range of sequences, ...	... It is determined that the changes in maintenance unavailability are too small to consider ~~significant~~ impacts on the reliability of SW pumps that could impact a wider range of sequences,
3.4	... If it is determined that the standard lacks specific requirements, their ***significance*** to the application shall be assessed.... If the absent requirements are not ***significant***... If the absent requirements are ***significant***....	If it is determined that the standard lacks specific requirements, their **relevance** ~~significance~~ to the application shall be assessed.... If the absent requirements are not ~~significant~~ **relevant** If the absent requirements are ~~significant~~ **relevant**....

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
3.5	... If the PRA does not satisfy a SR for the appropriate Capability Category, then determine if the difference is ***significant***....Acceptable requirements for determining the ***significance*** of this difference include the following: (a) The difference is not applicable or does not effect... (b) Modeled accident sequences accounting for at least 90% of CDF/LERF, as applicable.... Determination of ***significance*** will depend.... If the difference is not ***significant***.... If the difference is ***significant***...	... If the PRA does not satisfy a SR for the appropriate Capability Category, then determine if the difference is **relevant or** significant.....Acceptable requirements for determining the ~~significance of this difference~~ **differences** include the following: (a) The difference **is not relevant if it** is not applicable or does not affect the quantification.... (b) **The difference is not significant if the m**~~M~~odeled accident sequences accounting for at least 90% of CDF/LERF, as applicable.... These determinations ~~Determination of significance~~ will depend.... If the difference is not **relevant or** significant, then.... If the difference is **relevant or** significant, then....
3.6	Second example of supplementary requirements: It is desired to rank the snubbers in a plant according to their risk ***significance*** for..... snubbers are considered safety-related,.....the safety ***significance*** of snubbers can be approximated by the safety ***significance*** of the components that they support for the events in which the snubbers are safety ***significant*** and ..... to rank the safety ***importance*** of the snubbers.	Second example of supplementary requirements: .... It is desired to rank the snubbers in a plant according to their ~~risk~~ significance for..... snubbers are considered safety-related,.....the ~~safety~~ significance of snubbers can be approximated by the ~~safety~~ significance of the components that they support for the events in which the snubbers are ~~safety~~ significant and ..... to rank the ~~safety~~ importance of the snubbers.
4.3.6	(b) technical experts with knowledge of a particular technical area of ***importance*** to the issue.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: (b) technical experts with knowledge of a particular technical area of ~~importance~~ **relevance**
IE-A4	Cat I: PERFORM a qualitative review of system impacts to identify potentially ***risk-significant*** system initiating events Cat II: USE a structured approach .... to assess and document the possibility of an initiating event resulting from individual systems or train failures.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I: PERFORM a qualitative review of system impacts to identify potential~~ly risk-significant~~ system initiating events Cat II: "USE a structured approach .... to assess and document the possibility of an initiating event resulting from **individual** systems or train failures." *[Note: Includes staff position from Table 3]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
IE-B4	GROUP... those categories with ***significant***ly different plant response impacts or those.....	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: GROUP..... those categories with ~~significantly~~ different plant response **(i.e., those with different success criteria)** impacts or those....
IE-C12	Cat I and II: "In the ISLOCA frequency analysis, INCLUDE features of plant and procedures that could ***significantly*** influence the ISLOCA frequency: (a) configuration of potential pathways including numbers and types of valves and their relevant failure modes, existence and positioning of relief valves (b) provision of protective interlocks (c) relevant surveillance test procedures" Cat III: "In the ISLOCA frequency analysis, INCLUDE features of plant and procedures that could ***significantly*** influence the ISLOCA frequency: (a) configuration of potential pathways including numbers and types of valves and their relevant failure modes, existence and positioning of relief valves (b) provision of protective interlocks (c) relevant surveillance test procedures" and also include: (a) EVALUATE surveillance procedure steps..... (f) INCLUDE quantitatively the valve isolation capability given the hgih-to-low pressure differential.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I and II: "In the ISLOCA frequency analysis, INCLUDE **the following** features of plant and procedures that ~~could significantly~~ influence the ISLOCA frequency: **(a) configuration of potential pathways including numbers and types of valves and their relevant failure modes, existence and positioning of relief valves** **(b) provision of protective interlocks** **(c) relevant surveillance test procedures**" Cat III: "In the ISLOCA frequency analysis, INCLUDE **the following** features of plant and procedures that ~~could significantly~~ influence the ISLOCA frequency: **(a) configuration of potential pathways including numbers and types of valves and their relevant failure modes, existence and positioning of relief valves** **(b) provision of protective interlocks** **(c) relevant surveillance test procedures**" **and also include:** (a) EVALUATE surveillance procedure steps..... (f) INCLUDE quantitatively the valve isolation capability given the high-to-low pressure differential. *[Note: Includes staff position from Table 1]*
IE-D3	(j) DOCUMENT the ***important*** assumptions made in the analysis that affect the results	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: (j) DOCUMENT the ~~important~~ **key** assumptions made in the analysis that affect the results

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
4.5.2.1	4.5.2.1 Objectives. The objectives...reflected in the assessment of CDF and LERF is such a way that (a) ***significant*** operator actions,..... that can alter sequences are appropriately included....	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. The LERF clarification was not mutually resolved. NRC position: 4.5.2.1 Objectives. The objectives...reflected in the assessment of CDF ~~and LERF~~ is such a way that (a) ~~significant~~ operator actions, mitigation systems, and phenomena that can alter sequences are appropriately included... *[Note: Includes staff position on clarification of Level 2 terminology]*
AS-A10	Cat II: .... DEVELOP the accident sequence model to sufficient detail that ***significant*** differences in requirements on systems and operator response interactions are captured. For example, diverse systems .... impact the sequence development. If, however, choosing one over another ***significant***ly changes the requirements for operator intervention or the need for other systems, they should be modeled separately.	Cat II: ....DEVELOP the accident sequence model to sufficient detail that ~~significant~~ differences in requirements on systems and **required** operator ~~responses~~ interactions **(e.g., systems initiations or valve alignments)** are captured. ~~For example, d~~ **D**iverse systems... impact the sequence development. If, however, choosing one over another ~~significantly~~ changes the ~~requirements~~ **need** for operator intervention **(e.g., need for system realignment versus opening a valve), they are** ~~or the need for other systems, they should be~~ modeled separately.
4.5.3.1	(a) overall success criteria are defined (i.e., core damage and large early release)	The LERF clarification was not mutually resolved. NRC position: (a) overall success criteria are defined (i.e., core damage~~ and large early release~~) *[Note: Includes staff position on clarification of Level 2 terminology]*
Tbl 4.5.3-1 HLR-SC-B	....for quantification of CDF and LERF, determination of the relative impact of success criteria on SSC and human action ***importance***, and the impact of uncertainty on this determination.	The LERF clarification was not mutually resolved. NRC position: ..... for quantification of CDF~~ and LERF~~, determination of the relative impact of success criteria on **the importance of the** SSC**s** and human action**s** ~~importance~~ and the impact of uncertainty on this determination. *[Note: Includes staff position on clarification of Level 2 terminology]*
SC-A3	...to prevent core damage or radioactivity release in the accident sequences...	The LERF clarification was not mutually resolved. NRC position: ...to prevent core damage ~~or radioactivity release~~ in the accident sequences... *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
SC-B1	Cat II: "USE appropriate realistic generic analyses/evaluations.....requiring detailed computer modeling. Realistic models or analyses may be supplemented.....if such supplemental analyses do not affect risk ***significant*** CDF/LERF sequences. Cat III: "USE realistic, plant-specific models.....success criteria requiring detailed computer modeling.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat II: "USE appropriate realistic ~~best-estimate~~ generic analyses/evaluations.....requiring detailed computer modeling. **Realistic** ~~best-estimate~~ models or analyses may be supplemented.....if such supplemental analyses do not affect **the determination of which combinations of systems and trains of systems are required to respond to an initiating event.** ~~risk significant CDF/LERF sequences~~ Cat III: USE ~~best estimate~~ **realistic** plant-specific.....success criteria requiring detailed computer modeling. **DO NOT USE assumptions that could yield conservative or optimistic success criteria** *[Note: Includes staff position in Table 3]*
SC-B4	....in the determination of success criteria for CDF/LERF....	The LERF clarification was not mutually resolved. NRC position: ....in the determination of success criteria for CDF~~/LERF~~.... *[Note: Includes staff position on clarification of Level 2 terminology]*
SC-B6	Cat I: If ***significant***ly conservative or optimistic assumptions have been made in performing success criteria, EVALUATE their impacts on CDF/LERF. Cat II: If ***significant***ly conservative or optimistic assumptions have been made in performing success criteria, QUANTIFY their impacts on CDF/LERF. Cat III: DO NOT USE assumptions that could yield conservative or optimistic success criteria	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: delete the entire SR Cat I and II: redundant with QU-E4 Cat III: move to SC-B1

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
SC-C1	Cat I: DOCUMENT ***important*** bases, references and assumptions for success criteria. IDENTIFY ***significant***ly conservative....assumptions and their general impacts on the results. Cat II and III: DOCUMENT.... the supporting engineering bases, references, and ***important*** assumptions for success criteria...	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I: DOCUMENT ~~important~~ bases, references, and **key** assumptions for success criteria. IDENTIFY **which of the key assumptions are** ~~significantly~~ conservative or optimistic ~~assumptions~~ and **IDENTIFY** their general impacts on the results. Cat II and III: DOCUMENT.... the supporting engineering bases, references, and ~~important~~ **key** assumptions for success criteria...
SC-C3	....each approach results in ***significant***ly different PRA results or insights.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: ....~~each approach results in significantly different PRA results or insights~~ **the approach represents a key source of uncertainty**.
SC-C4	(e) identification of ***important*** assumptions used in establishing success criteria	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: (e) identification of ~~important~~ **key** assumptions used in establishing success criteria.
SY-A14	(d) It is shown that the omission of the contributor does not have a ***significant*** impact on the results	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: ~~(d) It is shown that the omission of the contributor does not have a significant impact on the results~~
SY-B5	(c) an evaluation that demonstrates that excluding the dependency does not ***significant***ly affect the system model	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: ~~(c) an evaluation that demonstrates that excluding the dependency does not significantly affect the system model~~

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
HR-D2	Cat II: USE detailed assessment ....for ***dominant*** system contributors. Screening values.....for systems that do not appear in the ***dominant*** sequences.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat II: USE detailed assessments .... for ~~dominant system contributors~~ **significant human failure basic events**. Screening values.... for ~~systems that do not appear in the dominant sequences~~ **non-significant human failure basic events**.
HR-E2	Cat II and III: ...the performance of a response action in ***dominant*** sequences (e.g., manual start of a standby pump following failure of autostart).	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: ~~Cat I:~~ ~~INCLUDE those actions ....below the defined limit (BWR)].~~ Cat **I**, II and III: INCLUDE (a) those actions..... (b) those actions....in the performance of a response action **as identified in HR-H1.** ~~in dominant sequences (e.g., manual start of a standby pump following failure of autostart).~~
HR-G1	Cat I: ...of the HEPs of the HFEs in ***dominant*** accident sequences that survive initial quantification. Screening values may be used .... in non-***dominant*** sequences. Cat II and III: PERFORM detailed analyses for the estimation of those post-accident HEPs of the HFEs that survive initial quantification. Screening values may be used for ....appear in non-***dominant*** sequences.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I: ...of the HEPs **for human failure events** in ~~dominant~~ accident sequences that survive initial quantification. ~~Screening values may be used .... in the non-dominant sequences.~~ Cat II ~~and III~~: PERFORM detailed analyses for the estimation of ~~those post-accident~~ HEPs ~~of the HFEs that survive initial quantificaiton~~ **for significant human failure basic events**. **USE** ~~Ss~~creening values ~~may be used~~ for HEPs ~~that only appear in non-dominant sequences~~. **for non-significant human failure basic events.** **Cat III:** **PERFORM detailed analyses for the estimation of HEPs for the human failure basic events.**

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
HR-G5	Cat II: BASE the required time to complete actions in ***dominant*** scenarios on actual time measurements.....	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat II: BASE the required time to complete actions **for significant human failure basic events** ~~in dominant scenarios~~ on actual time measurements.....
HR-H1	Cat I and II: INCLUDE human recovery actions that can restore the functions, systems or components contributing to the ***dominant*** sequences. Recovery actions are limited to those to which HRA techniques can be applied, such as system reconfiguration, or simply actions such as manually opening or closing a failed valve, but not repair Cat III: "INCLUDE....components. Recovery actions are limited to those to which HRAtechniques can be applied, such as system reconfiguration, or simply actions such as manually opening or closing a failed valve, but not repair.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I and II: INCLUDE human recovery actions that can restore the functions, systems or components **on an as-needed basis to eliminate unnecessarily conservative contributions to accident sequences.** ~~contributing to the dominant sequences~~. *[Note: Includes staff position in Table 4]*
HR-I1	(b)(2) their impact on the CDF and LERF results (d)(5) all HEPs for each post-initiator human action and ***significant*** dependency effects	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. The LERF clarification was not mutually resolved. NRC position: (b)(2) their impact on the CDF ~~and LERF~~ results (d)(5) all HEPs for each post-initiator human action and **the identified** ~~significant~~ dependency effects **(e) justification of the minimum probability used for the joint probability of multiple human errors occurring in a given cutset.** *[Note: Include staff position in Table 4]* *[Note: Includes staff position on clarification of Level 2 terminology]*
Tbl 4.5.6-1 HLR-DA-D	The parameter estimates shall be based on relevant generic industry or plant-specific evidence....Parameter estimates for the ***important*** parameters shall be accompanied by a characterization of the uncertainty.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: The parameter estimates shall be based on relevant generic industry or plant-specific evidence..... **Each p**~~P~~arameter estimate~~s for important parameters~~ shall be accompanied by a characterization of the uncertainty.

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
DA-C12	Cat II and III: ...INTERVIEW the plant... components, trains, or systems in ***dominant*** accident scenarios...	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat II and III: ...INTERVIEW the plant... components, trains, or systems **for which the unavailabilities are significant basic events....** ~~in dominant accident scenarios...~~
DA-D1	Cat I: "USE plant-specific parameter estimates for events modeling the unique design or operational features if available, or use generic information modified as discussed in DA-D2; USE generic information for the remaining events." Cat II: "CALCULATE realistic parameter estimates for ***dominant*** contributors; if sufficient plant-specific data is not available, use a Bayesian update process of generic industry data. CHOOSE prior distributions as either non-informative, or representative of variability in industry data. CALCULATE parameter estimates for the remaining events by using generic industry data." Cat III: "CALCULATE realistic parameter estimates; if sufficient plant-specific data is not available, use a Bayesian update process of generic industry data. CHOOSE prior distributions as either non-informative, or representative of variability in industry data."	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I: "USE plant-specific parameter estimates **for events modeling** the unique design or operational features **if available, or use generic information modified as discussed in DA-D2; USE** ~~with~~ generic information for the remaining events." Cat II: "CALCULATE realistic parameter estimates for **significant basic events,** ~~dominant contributors using Bayesian updates~~ **if sufficient plant-specific data is not available**, **use a Bayesian update process of generic industry data**. CHOOSE prior distributions as either non-informative, or representative of variability in industry data. CALCULATE parameter estimates for the remaining events by using ~~plant-specific~~ **generic industry** data." Cat III: **"CALCULATE realistic parameter estimates; if sufficient plant-specific data is not available, use a Bayesian update process of generic industry data. CHOOSE prior distributions as either non-informative, or representative of variability in industry data."** *[Note: Includes staff position in Table 3]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
DA-D3	Cat I: PROVIDE a characterization...of the basic events that *contribute measurably* to CDF and LERF. Cat II: "PROVIDE a mean value of, and a statistical representation of the uncertainty intervals for, the parameter estimates that ***contribute measurably*** to CDF and LERF. The parameter estimates that ***contribute measurably*** are those events that are retained in the sequences that survive truncation in the final quantification of CDF and LERF. Acceptable systematic methods include Bayesian updating, frequentist method, or expert judgment." Cat III: "PROVIDE a mean value of, and a statistical representation of the uncertainty intervals for**,** the parameter estimates. Acceptable systematic methods include Bayesian updating, frequentist method, or expert judgment."	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I: PROVIDE a characterization...of the **significant** basic events~~ that contribute measurably to CDF and LERF~~. Cat II: "PROVIDE a mean value of, and a statistical representation of~~,~~ the uncertainty intervals for, the parameter estimates **of the significant basic events** ~~that contribute measurably to CDF and LERF~~. Acceptable systematic methods include Bayesian updating, frequentist method, or expert judgment." Cat III: "PROVIDE a mean value of, and a statistical representation of~~,~~ the uncertainty intervals for**,** the parameter estimates. Acceptable systematic methods include Bayesian updating, frequentist method, or expert judgment." *[Note: Includes staff position in Table 4]*
DA-D5	Cat I: "USE the Beta-factor approach (i.e., the screening approach in NUREG/CR-5485) or an equivalent for the estimation of CCF parameters." Cat II: "USE .... CCF parameters for ***dominant*** CCF contributors:... (d) Binomial Failure Rate Model. JUSTIFY the use of alternative methods (i.e., provide evidence of peer review or QA of the method which demonstrates its acceptability). Cat III: "...JUSTIFY the use of alternative methods (i.e., provide evidence of peer review or QA of the method which demonstrates its acceptability).	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I: "USE the Beta-factor approach **(i.e., the screening approach in NUREG/CR-5485)** or an equivalent for the estimation of CCF parameters." Cat II: "USE .... CCF parameters for **significant CCF basic events** ~~dominant CCF contributors~~:... (d) Binomial Failure Rate Model. JUSTIFY the use of alternative methods **(i.e., provide evidence of peer review or verification of the method which demonstrates its acceptability)**. Cat III: "...JUSTIFY the use of alternative methods **(i.e., provide evidence of peer review or verification of the method which demonstrates its acceptability)**. *[Note: Includes staff position from Table 1]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
DA-D6	Cat II and III: USE realistic common cause failure probabilities....for ***dominant*** common cause events....and data models are consistent.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat II ~~and III~~: USE realistic common cause failure probabilities....for ~~dominant~~ **significant** common cause **basic** events....and data models are consistent. **Cat III:** **USE realistic common cause failure probabilities....for common cause basic events....and data models are consistent.**
DA-D7	Cat I, II and III: (a) ...where ***significant*** generic parameter estimates are available.... Cat II: ....as it becomes available for ***dominant*** contributors...	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I, II and III: (a) .....where ~~significant~~ generic parameter estimates are available.... Cat II: ....as it becomes available for **significant basic events** ~~dominant contributors~~...
DA-E1	(f) ***key*** assumptions made	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: No objection

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
IF-C5	(c) an area with no ***significant*** flood sources and the nature .... (d) an area with mitigation systems.... capable of preventing unacceptable flood levels and other flooding effects are expected to be in***significant***..... JUSTIFY any other qualitative screening criteria (provide evidence that the qualitative alternative used is acceptable)."	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: (c) an area with no ~~significant~~ flood sources ~~and the nature of the of the flood (e.g., spraying of equipment) does not cause equipment failure (i.e., areas where there are no flood sources or where the volumes of the flood sources are insufficient,~~ **sufficient (e.g.,** through either spray or immersion**)** to cause failure of equipment~~)~~; (d) an area with **flooding** mitigation systems (e.g., drains or sump pumps) capable of preventing unacceptable flood levels~~. and other flooding effects are expected to be insignificant;~~ **and the nature of the flood does not cause equipment failure (e.g., through spray)** JUSTIFY any other qualitative screening criteria **(provide evidence that the qualitative alternative used is acceptable)**." *[Note: Includes staff position from Table 3]*
IF-D4	Cat I: PERFORM ....the relative risk ***significance*** of modeled SSCs .... INCLUDE dual unit initiators. If the qualitative evaluation .... INCLUDE dual unit initiators.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I: ~~For multi-units sites, with shared systems or structures, PERFORM....then INCLUDE dual unit initiators.~~ **For multi-units sites with shared systems or structures, INCLUDE multi-unit internal flood initiators.** Cat II and III: For multi-unit sites with shared systems or structures, TREAT quantitatively ~~dual~~ **multi-**unit internal flood initiators.
IF-F2	(j) ...from ***importance*** measure calculation	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: no objection

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
4.5.8.1	The objectives of the quantification element are to provide an estimate of CDF based upon the plant-specific....	The LERF clarification was not mutually resolved. NRC position: The objectives of the quantification element are to provide an estimate of CDF **(and support the quantification of LERF)** based upon the plant-specific.... *[Note: Includes staff position on clarification of Level 2 terminology]*
4.5.8.1	(b) ***important*** contributors to CDF are identified in terms of initiating events, accident sequences, equipment failures and operator errors.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. The LERF clarification was not mutually resolved. NRC position: (b) ~~important~~ **significant** contributors to CDF **(and LERF)** are identified ~~in terms of~~ **such as** initiating events, accident sequences **and basic events (equipment unavailabilities and human failure events)**~~, equipment failures and operator errors~~ *[Note: Includes staff position on clarification of Level 2 terminology]*
4.5.8.1	(c) ***significant*** dependencies are accounted for	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: (c) ~~significant~~ dependencies are accounted for
Tbl 4.5.8-1 HLR-QU-D	.....***important*** contributors to CDF, such as initiating events, accident sequences, equipment failures and operator errors, shall be identified.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: ...~~important~~ **significant** contributors to CDF **(and LERF)**, such as initiating events, accident sequences **and basic events (equipment unavailabilities and human failure events)**~~, equipment failures and operator errors~~ shall be identified.
Tbl 4.5.8-1 HLR-QU-E	...Sources of model and ***key*** assumptions shall be identified...	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: ... **Key s**~~S~~ources of model uncertainty and key assumptions **(those that have the potential to impact the significant sequence)** shall be identified...

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
QU-A2	Cat I: "ESTIMATE the point estimate CDF from internal events. PROVIDE estimates of the individual sequences in a manner consistent with the estimation of total CDF to identify ***dominant*** sequences and conform....is appropriately reflected. The estimates may be accomplished by using....split fractions." Cat II: "ESTIMATE the mean CDF from internal events, ensuring that the "state-of-knowledge" correlation between event probabilities is taken into account. PROVIDE estimates of the individual sequences in a manner consistent with the estimation of total CDF to identify ***dominant*** sequences and confirm....is appropriately reflected. The estimates may be accomplished by using....split fractions." Cat III: CALCULATE the mean CDF from internal events by propagating the uncertainty distributions, ensuring that the "state-of-knowledge" correlation between event probabilities is taken into account. PROVIDE estimates of the individual sequences in a manner consistent with the estimation of total CDF to identify ***dominant*** sequences and confirm....is appropriately reflected. The estimates may be accomplished by using....split fractions."	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I: "ESTIMATE the ~~overall~~ **point estimate** CDF from internal events. ~~QUANTIFY~~ **PROVIDE estimates of the** individual sequences **in a manner consistent with the estimation of total CDF** to identify ~~dominant~~ **significant** sequences ~~and confirm .... is appropriately reflected.~~ The estimates may be accomplished by using....split fractions." Cat II: "ESTIMATE the ~~overall~~ **mean** CDF from internal events, **ensuring that the "state-of-knowledge" correlation between event probabilities is taken into account**. ~~QUANTIFY~~ **PROVIDE estimates of the** individual sequences **in a manner consistent with the estimation of total CDF** to identify ~~dominant~~ **significant** sequences ~~and confirm....is appropriately reflected~~. The estimates may be accomplished by using....split fractions." Cat III: ~~ESTIMATE~~ **CALCULATE** the ~~overall~~ **mean** CDF from internal events **by propagating the uncertainty distributions, ensuring that the "state-of-knowledge" correlation between event probabilities is taken into account**. ~~QUANTIFY~~ **PROVIDE estimates of the** individual sequences **in a manner consistent with the estimation of total CDF** to identify ~~dominant~~ **significant** sequences ~~and confirm....is appropriately reflected~~. The estimates may be accomplished by using....split fractions." *[Note: Includes staff position from Table 3]*
QU-B2	...that ***significant*** dependencies are not eliminated.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: TRUNCATE accident sequences and associated system models at a sufficiently low cutoff value that ~~significant~~ dependencies **(e.g., human failure dependencies) associated with significant cutsets or accident sequences** are not eliminated.

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
QU-B3	EVALUATE ...avoid discarding ***important*** cutsets and sequences. ESTABLISH final .. ...the overall model results are not ***significant***ly changed and that no ***important*** accident sequences are inadvertently eliminated.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: ~~SELECT initial truncation limits....toward a stable value. EVALUATE ...avoid discarding important cutsets and sequences.~~ ESTABLISH ~~final~~ truncation limits.....the overall model results **converge** ~~are not significantly changed~~ and that no ~~important~~ **significant** accident sequences are inadvertently eliminated.
QU-B5	....AVOID introducing ***significant*** conservatisms or non-conservatisms	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: ....AVOID introducing ~~significant~~ **unnecessary** conservatisms or non-conservatisms
QU-B6	...for realistic estimation of CDF and LERF....	The LERF clarification was not mutually resolved. NRC position: ...for realistic estimation of CDF ~~and LERF~~.... *[Note: Includes staff position on clarification of Level 2 terminology]*
QU-B9	(c) ....within modules (e.g., risk ***significance***).	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: No objection
QU-C3	TRANSFER the ***important*** sequence characteristics between event trees, not just the sequence frequency. For example, ...	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: **When linking event trees**, TRANSFER the ~~important~~ sequence characteristics **(e.g., failed equipment, flag settings)** ~~between event trees~~ **that impact the logic or quantification of the subsequent accident development, as well as**~~, not just~~ the sequence frequency. For example,.....

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
Tbl 4.5.8-2(d)	.....***important*** contributors to CDF, such as initiating events, accident sequences, equipment failures and operator errors, shall be identified.	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. The LERF clarification was not mutually resolved. NRC position: ...~~important~~ **significant** contributors to CDF **(and LERF)**, such as initiating events, accident sequences **and basic events (equipment unavailabilities and human failure events)**~~, equipment failures and operator errors~~ shall be identified. *[Note: Includes staff position on clarification of Level 2 terminology]*
QU-D1	REVIEW the ***dominant*** cutsets or sequences to determine that the logic of the cutset or sequence is reasonable and to identify that there are no anomalies in the results....	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: REVIEW ~~the dominant cutsets or sequences~~ **a sample of the significant cutsets and sequences, sufficient** to determine that the logic of the cutset or sequence is reasonable and to identify that there are no anomalies in the results....
QU-D3	Cat III: REVIEW ***significant*** differences	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat II: ~~COMPARE results ....of unique outliers.~~ Cat III: ~~COMPARE results to ...significant differences.~~ **Cat II and III:** **COMPARE results to those from similar plants and IDENTIFY causes for differences for the significant contributors.**
QU-D4	REVIEW a sampling of non-***dominant*** accident cutsets or sequences....	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: REVIEW a sampling of ~~non-dominant~~ **non-significant** accident cutsets or sequences.....

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
QU-D5	Cat I, II and III: IDENTIFY ***important*** contributors to CDF.... An acceptable approach is the use of ***importance*** measures. REVIEW the ***importance*** values... Cat II and III: ...EXAMINE the ***importance*** of SSCs that contribute to initiating event frequencies...	Cat I, II and III: IDENTIFY ~~important~~ **significant** contributors to CDF..... An acceptable approach is the use of importance measures. REVIEW the importance values... Cat II and III: ... ~~EXAMINE~~ **IDENTIFY** the ~~importance of SSCs~~ **significant basic events** that contribute to **the significant** initiating event**s whose** frequencies **were quantified using fault tree type methods**...
Tbl 4.5.8-2(e)	...Sources of model uncertainty and ***key*** assumptions shall be identified...	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: ... **Key s**~~S~~ources of model uncertainty and key assumptions shall be identified...
QU-E2	IDENTIFY ***key*** source of model uncertainty...	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: No objection
QU-E3	Cat II: "ESTIMATE the uncertainty interval of the overall CDF results. ESTIMATE the uncertainty intervals associated with parameter uncertainties taking into account the "state-of-knowledge" correlation and characterize the uncertainty associated with ***key*** model uncertainties."	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat II: "ESTIMATE the uncertainty interval of the overall CDF results. ESTIMATE the uncertainty intervals associated with parameter uncertainties **taking into account the "state-of-knowledge" correlation** and characterize the uncertainty associated with key model uncertainties." *[Note: Includes staff position from Table 3]*
QU-E4	Cat I: ...impact of the ***key*** model uncertainties... Cat II and III: EVALUATE....***key*** assumptions....EXAMINE ***key*** assumptions....	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: No objection

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
QU-F1	(g) ...the ***key*** factors in causing the accidents to be non-***dominant*** (j) ***importance*** measure results (l) ....assessment of the ***significance*** of ***important*** assumptions	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: (g) **the significant basic events** ~~equipment or human actions that are the the key factors in~~ causing the accident~~s~~ **sequences** to be ~~non-dominant~~ non-significant. (j) importance measure results (l) **key** assumptions used in the ... assessment of ~~the significance of important~~ **their risk significance**
QU-F2	Cat I, II and III: DESCRIBE the ***key*** contributors to CDF.... Cat II and III: ... detailed description of ***dominant*** accident sequences....	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I, II and III: DESCRIBE the ~~key~~ **significant** contributors **(such as of initiating events, accident sequences, basic events)** to CDF.... Cat II and III: ... detailed description of ~~dominant~~ **significant** accident sequences....
QU-F3	Cat I and II: "DOCUMENT important assumptions and causes of uncertainty, such as: possible optimistic or conservative success criteria, ... possible spatial dependencies, etc." Cat III: ....***important*** assumptions	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: Cat I and II: ~~No requirement to document important assumptions and causes of uncertainty.~~ Cat **I, II** and III: "DOCUMENT **key** ~~**important**~~ assumptions and causes of uncertainty, such as: possible optimistic or conservative success criteria, ... possible spatial dependencies, etc." *[Note: Includes staff position from Table 3]*
4.5.9.1	(b) ***significant*** operator actions.....	The proposed term was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term. NRC position: (b) ~~significant~~ operator actions....

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
Tbl 4.5.9-1 HLR-LE-B	LERF evaluations shall include an analysis of the credible severe accident phenomena.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: ~~LERF evaluations shall include an analysis of the credible severe accident phenomena.~~ **The accident progression analysis shall include an evaluation of the credible contributors (e.g., phenomena, equipment failures, human actions) to a large early release.** *[Note: Includes staff position on clarification of Level 2 terminology]*
Tbl 4.5.9-1 HLR-LE-C	LERF evaluations shall include an analysis of containment system performance	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: ~~LERF evaluations shall include an analysis of containment system performance~~ **The accident progression analysis shall include identification of those sequences that would result in a large early release.** *[Note: Includes staff position on clarification of Level 2 terminology]*
Tbl 4.5.9-1 HLR-LE-D	LERF evaluations shall include an analysis of containment structural capability.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: ~~LERF evaluations shall include an analysis of containment structural capability.~~ **The accident progression analysis shall include an evaluation of the containment structural capability for those containment challenges that would result in a large early release.** *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
Tbl 4.5.9-1 HLR-LE-F	LERF shall be quantified in a manner that captures factors ***important*** to risk and supports an understanding of the sources of uncertainty.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: ~~LERF shall be quantified in a manner that captures **risk-significant** factors important to risk and supports an understanding of the sources of uncertainty.~~ **The quantification results shall be reviewed and significant contributors to LERF, such as plant damage states, containment challenges and failure modes, shall be identified. Sources of uncertainty shall be identified and their impact characterized.** *[Note: Includes staff position on clarification of Level 2 terminology*]
Tbl 4.5.9-2(b)	LERF evaluations shall include an analysis of the credible severe accident phenomena	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: ~~LERF evaluations shall include an analysis of the credible severe accident phenomena~~. **The accident progression analysis shall include an evaluation of the credible contributors to a large early release.** *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-B1	Cat I: INCLUDE potential severe accident phenomena that are ***important*** LERF contributors from the set identified in Table 4.5.9-2(a). An acceptable approach for identifying severe accident phenomena that could influence failure modes of various containment types is outlined in the LERF event trees contained in NUREG/CR-6595 [Note (1)]. (b) EVALUATE.... those severe accident phenomena that are not quantified.... Cat II: INCLUDE potential severe accident phenomena that could impact LERF from the set identified in Table 4.5.9-2(a). INCLUDE.... Cat III: INCLUDE all severe accident phenomena sufficient to support development of realistic containment event tree. Consider those contributors identified by IDCOR [Note (2)] and NUREG-1150 [Note 3)].	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: ~~INCLUDE~~ **IDENTIFY** ~~potential severe accident phenomena that are important~~ **significant** LERF contributors from the set identified in Table ~~4.5.9-2(a)~~ **4.5.9-3**. An acceptable approach for identifying **contributors** ~~severe accident phenomena~~ that could influence ~~failure modes of various containment types is outlined in the LERF event trees~~ **LERF for the various containment types is** contained in NUREG/CR-6595..... (b) EVALUATE.... those **contributors** ~~severe accident phenomena~~ that are not quantified.... Cat II: ~~INCLUDE~~ **IDENTIFY** ~~potential severe accident phenomena that could impact LERF~~ **credible LERF contributors,** from the set identified in Table ~~4.5.9-2(a)~~ **4.5.9-3**, **sufficient to support development of realistic significant accident progression sequences**. INCLUDE... Cat III: INCLUDE ~~all severe accident phenomena~~ **the credible LERF contributors** sufficient to support development of a realistic ~~containment event tree~~ **accident progression sequences.** INCLUDE all applicable failure modes. Consider those contributors identified by IDCOR [Note (2)] and NUREG-1150 [Note 3)]. *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-B2	Cat I: USE containment loads (e.g., temperature, pressure) that are conservative for ***significant*** challenges to containment. An acceptable alternative is the approach in NUREG/CR-6595[Note (1)]. Cat II: USE containment loads (e.g., temperature, pressure) that are realistic for ***significant*** challenges to containment. Conservative treatment is used for non-***dominant*** LERF contributors. Cat III: USE containment loads (e.g., temperature, pressure) that are realistic for challenges to containment.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: ~~USE~~ **DETERMINE** the containment ~~loads~~ **challenges** (e.g., ~~temperature~~, pressure **loads, debris impingement**) ~~that are conservative for significant challenges to containment~~ **resulting from contributors identified in LE-B1 in a conservative (generic or plant-specific analyses) manner.** An acceptable approach is the approach in NUREG/CR-6595 [Note (1)]. ~~Realistic loads my be used when available.~~ Cat II: ~~USE~~ **DETERMINE the** containment ~~loads~~ challenges (e.g., temperature, pressure **loads, debris impingement**) ~~that are realistic when possible for significant challenges to containment~~ **resulting from contributors identified in LE-B1 in a realistic manner. CONSIDER differential pressure loadings on the RCS as RCS motions may impact containment integrity.** Conservative treatment **or a combination of conservative and realistic treatment is** ~~may be~~ used for non-**significant** ~~dominant LERF~~ **phenomena** ~~contributors~~. Cat III: ~~USE~~ **DETERMINE the** containment ~~loads~~ **challenges** (e.g., ~~temperature~~, pressure **loads, debris impingement**) **resulting from contributors identified in LE-B1 in a realistic manner.** ~~that are realistic when possible for significant challenges to containment~~. **CONSIDER differential pressure loadings on the RCS as RCS motions may impact containment integrity.** *[Note: Includes staff position in Table 4 and includes staff position on clarification of Level 2 terminology]*
LE-B3	----	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: delete the entire SR as it is redundant with LE-B2 *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
Tbl 4.5.9-2(c)	LERF evaluations shall include an analysis of containment system performance.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: ~~LERF evaluations shall include an analysis of containment system performance.~~ **The accident progression analysis shall include identification of those sequences that would result in a large early release.** *[Note: Includes staff position on clarification of Level 2 terminology]*
LE-C1	Cat I, II and III: ...to propagate plant damage states in order to identify LERF scenarios in a manner consistent with the containment challenges and failure modes and intended level of detail.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I, II and III: ....to propagate plant damage states in order to identify ~~LERF scenarios in a manner consistent with containment challenges and failure modes and intended level of detail~~ **the accident progression sequences resulting in a large early release. The accident sequences are developed to a level of detail to account for the potential contributors identified in LE-B1 and analyzed in LE-B2.** *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-C3	Cat I: INCLUDE those branch points necessary to provide a conservative LERF estimation. Containment event trees.... Cat II: INCLUDE those branch points necessary to provide a realistic LERF estimation. It is acceptable to selectively include mitigating actions by operating staff, effect of fission product scrubbing on radionuclide release, and expected beneficial failures. PROVIDE technical justification (by plant-specific or applicable generic calculations demonstrating the feasibility of the actions, scrubbing mechanisms, or beneficial failures) supporting.... Cat III: INCLUDE those branch points necessary to provide a realistic LERF calculation. INCLUDE risk ***significant*** mitigating actions by operating staff, effect of fission product scrubbing on radionuclide release, and expected beneficial failures. PROVIDE technical justification (by plant-specific or applicable generic calculations demonstrating the feasibility of the actions, scrubbing mechanisms, or beneficial failures) for the inclusion of any of these features.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: INCLUDE those branch points necessary to provide ~~a conservative LERF estimation of~~ **accident progression sequences resulting in a large early release**. Containment event trees.... Cat II: INCLUDE those branch points necessary to provide a realistic ~~LERF~~ estimation **of the significant accident progression sequences resulting in a large early release**. ~~It is acceptable to selectively include~~ **INCLUDE significant** mitigating actions by operating staff, effect of fission product scrubbing on radionuclide release, and expected beneficial failures. PROVIDE technical justification **(by plant-specific or applicable generic calculations demonstrating the feasibility of the actions, scrubbing mechanisms, or beneficial failures)** supporting.... Cat III: INCLUDE those branch points necessary to provide a realistic ~~LERF calculation~~ estimation **of the accident progression sequences resulting in a large early release**. INCLUDE ~~risk significant~~ mitigating actions by operating staff, effect of fission product scrubbing on radionuclide release, and expected beneficial failures. PROVIDE technical justification **(by plant-specific or applicable generic calculations demonstrating the feasibility of the actions, scrubbing mechanisms, or beneficial failures)** for the inclusion of any of these features. *[Note: Includes staff position in Table 3 and also includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-C4	Cat I: "USE conservative system success criteria." Cat II: "....Conservative system success criteria is used for non-***dominant*** LERF contributors."	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: "USE conservative system success criteria." ~~Realistic criteria may be used.~~ Cat II: Use realistic system success criteria **for the significant accident progression sequences** . Conservative **or a combination of conservative and realistic** system success criteria ~~may be~~ is used for ~~non-dominant~~ ~~LERF~~ **non-risk significant accident progression sequences** ~~contribution.~~ *[Note: Includes staff position in Table 4 and also includes staff position on clarification of Level 2 terminology]*
LE-C5	DEVELOP system models that support LERF consistent with the applicable requirements for para. 4.5.4, as appropriate for the level of detail of the analysis	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: DEVELOP system models that support ~~LERF~~ **the accident progression analysis** consistent with the applicable requirements for para. 4.5.4, as appropriate for the level of detail of the analysis *[Note: Includes staff position on clarification of Level 2 terminology]*
LE-C6	DEFINE HFEs that support LERF consistent with the applicable requirements of para. 4.5.5 as appropriate for the level of detail of the analysis	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: DEFINE HFEs that support ~~LERF~~ **the accident progression analysis** consistent with the applicable requirements of para. 4.5.5 as appropriate for the level of detail of the analysis *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-C7	INCLUDE accident sequence dependencies in LERF event trees consistent with....	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: INCLUDE accident sequence dependencies in ~~LERF event trees~~ **the accident progression sequences** consistent with.... *[Note: Includes staff position on clarification of Level 2 terminology]*
LE-C8	Cat I: "...An acceptable alternative is the approach in NUREG/CR-6595 [Note (1)]." Cat II: "....in a realistic manner. Conservative treatment *is* used for non-***dominant*** LERF contributors. Cat III: "TREAT .... in a realistic manner".	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: "...An acceptable alternative is the approach in NUREG/CR-6595 [Note (1)]." ~~A realistic treatment may be used.~~ Cat II: "....in a realistic manner **for significant accident progression sequences resulting in a large early release**. ~~when possible~~. Conservative **or a combination of conservative and realistic** treatment ~~may be~~ ***is*** used for ~~non-dominant LERF contributors.~~ non-significant accident progression sequences. Cat III: "TREAT .... in a realistic manner" ~~when possible~~. *[Note: Includes staff position in Table 4 and also includes staff position on clarification of Level 2 terminology]*
LE-C9	Cat I: "...An acceptable alternative is the approach in NUREG/CR-6595 [Note (1)]." Cat II: "....in a realistic manner. Conservative treatment is used for non-***dominant*** LERF contributors. Cat III: "TREAT .... in a realistic manner".	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: "...An acceptable alternative is the approach in NUREG/CR-6595 [Note (1)]." ~~A realistic treatment may be used.~~ Cat II: "....in a realistic manner **for significant accident progression sequences resulting in a large early release**. ~~when possible~~. Conservative **or a combination of conservative and realistic** treatment ~~may be~~ **is** used for ~~non-dominant LERF contributors.~~ non-significant accident progression sequences Cat III: "TREAT .... in a realistic manner" ~~when possible~~. *[Note: Includes staff position in Table 4 and also includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
Tbl 4.5.9-2(d)	LERF evaluations shall include an analysis of containment structural capability	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: ~~LERF evaluations shall include an analysis of containment structural capability~~ **The accident progression analysis shall include an evaluation of the containment structural capability for those containment challenges that would result in a large early release.** *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-D1	Cat I: DETERMINE the containment ultimate capacity for the ***dominant*** challenges that result in LERF. USE a conservative evaluation of containment capacity for ***dominant*** containment failure modes. If generic assessments..... EVALUATE impact.....and INCLUDE as potential failure modes, as required.... Cat II: DETERMINE the containment ultimate capacity for the ***dominant*** challenges that result in LERF. PERFORM a realistic containment capacity analysis for ***dominant*** containment failure modes. USE a conservative evaluation of containment capacity for non-***dominant*** containment failure modes EVALUATE impact.....and INCLUDE as potential failure modes, as required.... JUSTIFY applicability to the plant being evaluated. Analyses may consider use of similar containment designs or estimating containment capacity based on design pressure and a realistic multiplier relating containment design pressure and median ultimate failure pressure. Quasi-static containment capability evaluations .... Such considerations need to be included for small volume containments....” Cat III: DETERMINE the containment ultimate capacity for the ***dominant*** challenges that result in LERF. PERFORM a realistic containment capacity analysis for ***dominant*** containment failure modes by using plant-specific input.....	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: DETERMINE the containment ultimate capacity for the ~~dominant~~ **containment** challenges that result in ~~LERF~~ **a large early release**. **USE a conservative containment capacity analysis for the significant containment challenges.** ~~USE a conservative evaluation of containment capacity for dominant containment failure modes. A realistic evaluation may be used.~~ EVALUATE impact.....**and** INCLUDE ~~in failure mode~~ **as potential containment challenges**, as required.... Cat II: DETERMINE the containment ultimate capacity for the ~~dominant~~ **containment** challenges that result in ~~LERF~~ **a large early release**. PERFORM a realistic containment capacity analysis~~ for dominant containment failure modes.~~ **for the significant containment challenges**. ~~The analysis may include some conservative parameters~~ **USE a conservative or a combination of conservative and realistic evaluation of containment capacity for non-significant containment challenges.** EVALUATE impact of ..... vent pipe bellows **and** INCLUDE ~~in failure mode~~ **as potential containment challenges**, as required.... JUSTIFY applicability to the plant being evaluated. **Analyses may consider use of similar containment designs or estimating containment capacity based on design pressure and a realistic multiplier relating containment design pressure and median ultimate failure pressure.** Quasi-static containment capability evaluations .... Such considerations ~~may~~ need to be included for small volume containments....” Cat III: DETERMINE the containment ultimate capacity for the **containment** ~~dominant~~ challenges that result in ~~LERF~~ **a large early release**. PERFORM a realistic containment capacity analysis for the ~~dominant~~ containment **challenges** ~~failure modes~~ by using plant-specific input.... *[Note: Includes staff position in Table 4 and also includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-D2	Cat I: When failure location [Note (2)] affects the event classification as a LERF, DEFINE failure location based on a conservative plant-specific containment assessment. JUSTIFY applicability of generic and other analyses. Analyses may consider conservative comparison with similar failure locations in similar containment designs. An acceptable alternative....” Cat II and III: When failure location [Note (2)] affects the event classification as a LERF, DEFINE failure location based upon a realistic plant-specific containment assessment.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: When containment failure location [Note (2)] affects the classification ~~as a LERF~~ **of the accident progression as a large early release**, DEFINE failure location based on a conservative plant-specific containment assessment. JUSTIFY applicability of generic and other analyses. **Analyses may consider comparison with similar failure locations in similar containment designs.** An acceptable When containment failure location [Note (2)] affects the classification alternative....” Cat II and III: When containment failure location [Note (2)] affects the classification ~~as a LERF~~ of the accident progression as a large early release, DEFINE failure location based on a realistic plant-specific containment assessment. *[Note: Includes staff position in Table 4 and also includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-D3	Cat I: USE a conservative evaluation of interfacing system failure probability for failure modes. If generic analyses .... being evaluated. Analyses may consider conservative comparison with similar interfacing systems in similar containment designs. Cat II: "PERFORM a realistic interfacing system failure probability analysis for ***dominant*** failure modes. Evaluation .... may include conservatisms. USE a conservative evaluation of interfacing system failure probability for non-***dominant*** failure modes..... JUSTIFY applicability to the plant being evaluated. Analyses may consider realistic comparison with similar interfacing systems in similar containment designs Cat III: PERFORM a realistic interfacing system failure probability analysis for the failure modes.....	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: USE a conservative evaluation of interfacing system failure probability for ~~dominant failure modes~~ **significant accident progression sequences resulting in a large early release**. ~~A realistic evaluation is acceptable.~~ If generic analyses ..... being evaluated. **Analyses may consider comparison with similar interfacing systems in similar containment designs."** Cat II: PERFORM a **realistic** interfacing system failure probability analysis for ~~dominant failure modes~~ **the significant accident progression sequences resulting in a large early release**. Evaluation....may include conservatisms. **USE a conservative or a combination of conservative and realistic evaluation of interfacing system failure probability for non-significant accident progression sequences resulting in a large early release.** INCLUDE..... Cat III: PERFORM a realistic interfacing system failure probability analysis for ~~the dominant failure modes~~ **the accident progression sequences resulting in a large early release**..... INCLUDE..... *[Note: Includes staff position in Table 4 and also includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-D4	Cat I: "USE a conservative evaluation of secondary side isolation capability for SG tube failure modes. If generic analyses generated ..... being evaluated. Analyses may consider conservative comparison with similar isolation capability in similar containment designs." Cat II: "PERFORM a realistic secondary side isolation capability analysis for **dominant** SG tube failure modes. Evaluation .... may include conservatisms. USE a conservative evaluation of secondary side isolation capability for non-***dominant*** SG tube failure modes..... JUSTIFY applicability to the plant being evaluated. Analyses may consider realistic comparison with similar isolation capability in similar containment designs" Cat III: "PERFORM a realistic secondary side isolation capability analysis for SG tube failure modes..."	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: USE a conservative evaluation of secondary side isolation capability for ~~dominant SG tube failure modes~~ **significant accident progression sequences caused by SG tube failure resulting in a large early release.** ~~A realistic evaluation may be used.~~ If generic analyses.... being evaluated. **Analyses may consider comparison with similar isolation capability in similar containment designs**. Cat II: PERFORM a **realistic** secondary side isolation capability analysis for ~~dominant SG tube failure modes~~ **the significant accident progression sequences caused by SG tube failure resulting in a large early release**. Evaluation.... may include conservatisms. **USE a conservative or a combination of conservative and realistic evaluation of secondary side isolation capability for non-significant accident progression sequences resulting in a large early release**. JUSTIFY applicability to the plant being evaluated. **Analyses may consider realistic comparison with similar isolation capability in similar containment designs**. Cat III: PERFORM a realistic secondary side isolation capability analysis for ~~SG tube failure modes~~ **the accident progression sequences caused by SG tube failure resulting in a large early release**.... *[Note: Includes staff position in Table 4 and also includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-D6	Cat I: TREAT containment isolation in a conservative manner. INCLUDE... Cat II: TREAT containment isolation in a realistic manner for dominant contributors. Conservative treatment is used for non-dominant contributors. INCLUDE....	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: TREAT containment isolation in a conservative manner. ~~A realistic treatment may be used.~~ INCLUDE... Cat II: TREAT containment isolation in a realistic manner **for the significant accident progression sequences resulting in a large early release**. Conservative **or a combination of conservative and realistic** treatment **is** ~~may be~~ used for ~~non-dominant contributors~~ **the non-significant accident progression sequences resulting in a large early release.** INCLUDE.... *[Note: Includes staff position in Table 4 and also includes staff position on clarification of Level 2 terminology]*
Tbl 4.5.9-2(d) Note (2)	Containment failures below ground level may not be LERF even	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Containment failures below ground level may not be ~~LERF~~ **a large early release** even ..... *[Note: Includes staff position on clarification of Level 2 terminology]*
LE-E1	SELECT parameter values used in LERF analysis consistent with....	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: SELECT parameter values used in ~~LERF~~ **accident progression** analysis consistent with.... *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-E2	Cat II: USE realistic parameter estimates for ***dominant*** LERF sequences. Conservative parameter estimates are used for non-***dominant*** LERF sequences. Cat III: USE realistic parameter estimates.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat II: USE realistic parameter estimates ~~when possible~~ for ~~dominant LERF sequences~~ **significant accident progression sequences resulting in a large early release**. **USE conservative or a combination of conservative and realistic estimates for non-significant accident progression sequences resulting in a large early release**. Cat III: USE realistic parameter estimates ~~when possible~~. *[Note: Includes staff position in Table 4 and also includes staff position on clarification of Level 2 terminology]*
LE-E3	...QUANTIFY LERF consistent with the applicable requirements of para. 4.5.8, as appropriate for the level of detail of the analysis.	The LERF clarification was not mutually resolved. NRC position: ...QUANTIFY LERF consistent with the applicable requirements of para. 4.5.8, **specifically High Level Requirements A through E (i.e., Table 4.5.8-2(a)-(e)). The supporting requirements in these tables, although written in CDF language, are applicable depending on the method used in constructing the LERF model. IDENTIFY and JUSTIFY why a supporting requirements from Tables 4.5.8-2(a)-(e) ~~is not applicable.~~** ~~as appropriate for the level of detail of the analysis.~~ *[Note: Includes staff position on clarification of Level 2 terminology]*
Tbl 4.5.9-2(f)	LERF shall be quantified in a manner that captures factors important to risk and supports an understanding of sources of uncertainty	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: ~~LERF shall be quantified in a manner that captures factors important to risk and supports an understanding of sources of uncertainty.~~ **The quantification results shall be reviewed and significant contributors to LERF, such as plant damage states, containment challenges and failure modes, shall be identified. Sources of uncertainty shall be identified and their impact characterized.** *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-F1	Cat I and II: LIST the ***dominant*** contributors to LERF (e.g., HPME, steam explosions, ISLOCA). REVIEW for reasonableness. Cat III: PERFORM an ***importance*** analysis to identify the ***dominant*** contributors to LERF.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I ~~and II~~: ~~LIST the dominant contributors to LERF(e.g., HPME, steam explosions, ISLOCA)~~ **IDENTIFY the significant contributors to large early release (e.g., plant damage states, containment failure modes, containment system unavailabilities)**. REVIEW for reasonableness. Cat **II and** III: PERFORM an importance analysis to identify the **significant** ~~dominant~~ contributors to LERF. *[Note: Includes staff position in Table 3 and also includes staff position on clarification of Level 2 terminology]*
LE-F2	Cat I: ...***key*** sources of uncertainty.... Cat II: ....the ***key*** sources of uncertainty and includes sensitivity studies for ***dominant***t contributors to LERF. Cat III: PROVIDE uncertainty analysis which identifies the ***key*** sources of uncertainty and includes sensitivity studies.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat II ~~and III~~: ....the key sources of uncertainty and includes sensitivity studies for the ~~dominant~~ **significant** contributors to LERF. **Cat III:** **PROVIDE uncertainty analysis which identifies the key sources of uncertainty and includes sensitivity studies.** *[Note: Includes staff position in Table 3]*
LE-G2	DOCUMENT the potential LERF contributors considered, where appropriate, including....	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: DOCUMENT the ~~potential LERF contributors considered~~ **containment failure modes, phenomena, equipment failures and human actions considered in the development of the accident progression sequences**, where appropriate, including.... *[Note: Includes staff position on clarification of Level 2 terminology]*

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
LE-G3	DOCUMENT treatment of ***key*** factors influencing containment capability,.... (a) design details (i.e., heat sink distribution.....	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: DOCUMENT treatment of ~~key~~ factors influencing containment **challenges and containment** capability... (a) design details (e.g., heat sink distribution.... *[Note: Includes staff position on clarification of Level 2 terminology*]
LE-G5	(b) ***important*** assumptions (d) ...that are the ***key*** factors	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: (b) ~~important~~ **key** assumptions **that affect the results** (d) ....that are ~~the key factors~~ **significant basic events**
LE-G6	Cat I: DESCRIBE the ***key*** contributors to LERF Cat II and III: DESCRIBE the ***key*** contributors to LERF. PROVIDE a detailed description of ***dominant*** plant damage states and accident progression sequences.	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Cat I: DESCRIBE the ~~key~~ **significant** contributors to LERF. Cat II and III: ~~DESCRIBE the key contributors to LERF~~. PROVIDE a detailed description ~~of dominant plant damage states and accident progression sequences~~ **of the significant contributors (i.e., plant damage states, accident progression sequences, phenomena, containment challenges, containment failure modes) to LERF.** *[Note: Includes staff position on clarification of Level 2 terminology]*
LE-G7	DOCUMENT sources of uncertainty	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: DOCUMENT sources of uncertainty **consistent with QU-F3**

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
Tbl 4.5.9-3	Title: Potential LERF Contributors to be Considered Column: Potential LERF Contributor	The proposed term and LERF clarification was discussed in a series of ASME CNRM subcommittee conference calls. NRC position reflects the proposed resolution for the use of the term and LERF clarification. NRC position: Retitle: ~~Potential~~ LERF Contributors to be Considered Rename Column: ~~Potential~~ LERF Contributors Correction: • For Isolation Condenser Tube Rupture: the "x" should be under Mark I and not Ice Condenser • For (c) de-inerted operation: the "x" for BWR Mark III should be for (b) hydrogen combustion and not de-inerted operation • For steam explosions: the "x" should be for both BWRs and PWRs and not just BWRs, plus add note (3) negligible contributor to LERF for PWRs *[Note: Includes staff position on clarification of Level 2 terminology*]
5.4	2nd para: ....Changes that would impact risk-informed decisions should be prioritized to ensure that the most ***significant*** changes are incorporated as soon as practical. 3rd para: "Changes to a PRA due to PRA maintenance and PRA upgrade (where applicable) shall meet the requirements of Section 4. Prior to an application, if the changes have significantly impacted the PRA results, the maintained PRA shall receive a peer review and which satisfy the peer review requirements specified in Section 6, but limited to aspects of the PRA that have been maintained. Upgrades of a PRA shall receive a peer review and shall satisfy the peer review requirements specified in Section 6, but limited to aspects of the PRA that have been upgraded."	2nd para: ...Changes that would impact risk-informed decisions should be ~~prioritized to ensure that the most significant changes are~~ incorporated as soon as practical." 3rd para: "Changes to a PRA due to **PRA upgrade** ~~maintenance~~ shall meet the requirements of Section 4. Upgrades of a PRA **shall receive a peer review in accordance with the** ~~shall satisfy the peer review~~ requirements specified in Section 6, but limited to aspects of the PRA that have been upgraded. *[Note: Includes staff position in Table 4]*
6.1	"...The peer review shall assess the PRA to the extent necessary to determine if the methodology and its implementation meet the requirements of this Standard to determine the strengths and weaknesses in the PRA. Therefore, the peer review shall also assess the appropriateness of the ***significant*** assumptions. The peer review need not assess..."	"...The peer review shall assess the PRA to the extent necessary to determine if the methodology and its implementation meet the requirements of this Standard **to determine the strengths and weaknesses in the PRA. Therefore, the peer review shall also assess the appropriateness of the key assumptions.** The peer review need not assess..." *[Note: Includes staff position in Table 4]*
6.3.3	(i) the containment response calculations, performed specifically for the PRA, for the ***dominant*** plant damage states	move to 6.3.9.2 Change "dominant" to "significant"

Table 5

Staff Proposed Resolution for Use of Terms: Dominant, Important, Significant, and Staff Clarifications on LERF

Index No.	ASME Standard (including staff position in Appendix A)	NRC Position
6.3.4	The portion of selected system models selected for review typically includes (a) ***dominant*** systems contributing to the CDF or LERF calculated in the PRA (b) different models reflecting different levels of detail (c) front-line.....	The portion of selected system models selected for review typically includes **a sample of the systems whose failure contributes to the significant sequences (CDF or LERF), including**: ~~(a) dominant systems contributing to the CDF or LERF calculated in the PRA~~ **(a)**~~(b)~~ different models reflecting different levels of detail **(b)**~~(c)~~ front-line.....
6.3.5	The portion of the HRA selected for review typically includes (a) HEPs for dominant human actions contributing to the CDF or LERF calculated in the PRA (b) the selection and implementation of any screening HEPs..... (i) the selection and identification of the HFEs associated with the HEPs for the above review topics.	The portion of the HRA selected for review typically includes **a sample of the human failure events whose occurrence contributes to the significant sequences (CDF or LERF), including**: ~~(a) HEPs for dominant human actions contributing to the CDF or LERF calculated in the PRA~~ **(a)**~~(b)~~ the selection and implementation of any screening HEPs **(b)**~~(c)~~ post-accident HEPs.... **(h) the selection and identification of the HFEs associated with the HEPs for the above review topics.** *[Note: Includes staff position in Table 3]*
6.3.7	The portion of the internal flooding analysis selected for review typically includes (a) dominant internal contributors to the CDF or LERF calculated in the PRA (b) the screening of any flood areas (c) internal flood initiating event frequencies....	The portion of the internal flooding analysis selected for review typically includes **a sample of the screening of flood areas and the flooding sequence contributing to the significant sequences (CDF or LERF), including**: ~~(a) dominant internal contributors to the CDF or LERF calculated in the PRA~~ ~~(b) the screening of any flood areas~~ **(a)**~~(c)~~ internal flood initiating event frequencies **(b)**~~(d)~~ internal flood scenario involving each identified flood source....
6.3.9.2	6.3.3 ~~(i) the containment response calculations, performed specifically for the PRA, for the ***dominant*** plant damage states~~	**(i) the containment response calculations, performed specifically for the PRA, for the significant plant damage states**