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General Comment

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Rulemaking and Directives Branch
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U.S. Nuclear Regulatory Commission
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Subject: Industry Comments on Draft Regulatory Guide DG-1227 (Federal Register of September 3, 2009, FR 45655)

Project Number: 689

The U.S. Nuclear Regulatory Commission (NRC) has issued for public comment DG-1227, the proposed Revision 1 of Regulatory Guide (RG) 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications." The industry appreciates the opportunity to comment on this proposed revision. As RG 1.177 provides guidance to support risk-informed decisions on modification of an individual plant's technical specifications, which has been one of the most successful applications of the Commission's PRA policy statement, it is vital that the guidance given in the document is clear, stable and practical. The industry appreciates that several of the revisions proposed in DG-1227 improve the clarity of the expectations given in the document. Specifically, industry appreciates that DG-1227 proposes a revision that specifies acceptance guidelines for one-time changes that are consistent with NUMARC 93-01.

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Add: D. Helton (dmh2)

However, the industry is concerned that some of the revisions do not enhance clarity and stability, and, in some cases, these revisions include ambiguous language and leave important aspects of review of risk-informed licensing applications open to wide interpretation. Some specific areas that merit additional careful review are discussed below.

A key companion document, RG 1.200, "An Approach for determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," is listed in the references without a revision number; this should be corrected to specifically reference Revision 2. Referencing RG 1.200 without a revision number is not conducive to maintaining regulatory stability, as issuance of future revisions of RG 1.200 could ap

Attachments

NRC-2009-0383-DRAFT-0002.1: Comment on FR Doc # E9-21280
NRC-2009-0383-DRAFT-0002.2: Comment on FR Doc # E9-21280

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However, the industry is concerned that some of the revisions do not enhance clarity and stability, and, in some cases, these revisions include ambiguous language and leave important aspects of review of risk-informed licensing applications open to wide interpretation. Some specific areas that merit additional careful review are discussed below.

A key companion document, RG 1.200, "An Approach for determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," is listed in the references without a revision number; this should be corrected to specifically reference Revision 2. Referencing RG 1.200 without a revision number is not conducive to maintaining regulatory stability, as issuance of future revisions of RG 1.200 could appreciably alter the implications of portions of RG 1.177 without any prior NRC or public review. The lack of a specific revision number in the reference could also lead to ambiguity in the guidance during the implementation period for any future revisions to RG 1.200, as during this time, it would not be clear which revision is intended in the reference.

In Section 2.3.1, which discusses PRA technical acceptability and the applicability of RG 1.200 to risk-informed technical specifications, the reference to RG 1.200 needs to be specific to the current revision, which will be Revision 2, effective April 2010.

Section 2.3.2 states that the scope of the analysis should include all hazard groups unless it can be shown that the contribution from the specific hazard group is insignificant. The wording of the commission's phased approach to PRA scope states that contributors that are significant to the decision should be addressed using an assessment to the PRA standards. The wording in the DG should be revised to be consistent with the commission position. Otherwise, with current definitions relative to "insignificant," it could be concluded that the risk contributor must be quantified before it can be determined if quantification is unnecessary.

Section 2.3.5 discusses sensitivity and uncertainty analysis related to assumptions. A final sentence has been added, noting that the "applicant will have to provide substantial justification" relative to tier 2 and tier 3 controls. It is not clear why this sentence was added, and, as a substantial addition to the previous wording, the need for this change should be explained, or it should be removed. Further, regulatory guides are not regulations and should not use requirements language (e.g., "will have to").

Section 2.3.7 discusses configuration control and the Configuration Risk Management Program (CRMP). As noted in the DG, the CRMP is met though reliance on 10 CFR 50.65(a)(4). This regulatory position has been in effect since shortly after the promulgation of (a)(4). The NRC is currently performing a regulatory analysis to justify expansion of the scope of (a)(4) to include non-internal events initiators. However, this regulatory analysis is not complete. The DG is unclear in its discussion of PRA technical adequacy relative to the applicability of RG 1.200 on the tier 3 process; however, NRC staff has recently stated their intent that RG 1.200 should be applied to tier 3. This is a significant revision to an accepted regulatory position, and is neither justified nor appropriate. We request that the staff clarify the final RG to clearly state that RG 1.200 does *not* apply to tier 3. 10 CFR 50.65(a)(4) and its NRC-endorsed implementation guidance (RG 1.182) allow quantitative, qualitative or blended approaches to address risk assessment and management. Further, the scope of initiators is limited to internal events. These attributes reflect overt decisions made by the NRC in endorsing the guidance and reflect limits on the state of practice and modeling for configuration control purposes. All plants use their Level 1 internal events PRA in some fashion in their (a)(4) program, and most plants are approaching general conformance with the internal events portion of RG 1.200. However, the PRA is not expected to be compared to RG 1.200 specifically for the purposes of (a)(4) compliance. To invoke RG 1.200, Revision 2, or to make an unspecified reference to RG 1.200 in the context of tier 3 assessments will create substantial problems for the CRMP and (a)(4). The following problems would be created:

1. The expectations for the CRMP would diverge greatly from the (a)(4) program due to different initiators, and different expectations for quantification.
2. The CRMP expectation would essentially obviate the ongoing (a)(4) regulatory analysis, and is potentially subject to the same regulatory analysis considerations under 10 CFR 109, since it is a new regulatory position.
3. Invoking RG 1.200, Revision 2 into CRMP suggests an expectation for quantification of fire and external events (including seismic) risk. This capability at a level to support (a)(4) is many years away. Significant problems with conservatism in fire PRAs would lead to skewed risk assessments and incorrect risk management actions. The fire PRA will not be usable for decision-making involving comparison to internal events until the existing models are made more realistic. NRC staff involved in the ongoing (a)(4) regulatory analysis have stated that fire can be addressed qualitatively. Further, no plants have external events (seismic) PRAs meeting RG 1.200, Revision 2, and the pilot application is not yet complete.

Supplementary detailed comments, which were prepared with input from several industry groups, including the Boiling Water Reactor Owners' Group, are enclosed for your consideration. Additionally, NEI has reviewed the comments prepared by the Pressurized Water Owners' Group and endorses those comments.

We appreciate the opportunity to comment on the DG, and hope this revision will facilitate continued success with risk-informed technical specifications. We request your consideration of a public meeting prior to finalization of the RG to achieve better understanding of the disposition of our comments. Should you have any questions about these comments, please contact me or Victoria Anderson (vka@nei.org, 202.739.8101).

Sincerely,

Biff Bradley

Attachment

c: Mr. Mark Cunningham, U.S. Nuclear Regulatory Commission
Ms. Mary Drouin, U.S. Nuclear Regulatory Commission
Mr. Donald Harrison, U.S. Nuclear Regulatory Commission
Mr. Donald Helton, U.S. Nuclear Regulatory Commission
Mr. Andrew Howe, U.S. Nuclear Regulatory Commission
NRC Document Control Desk

Detailed NEI Comments on DG-1227 (Proposed Revision 1 of RG 1.177)

Page, Section	Comment
Throughout document	Suggest changing "allowed outage time" to "completion time" and "surveillance test interval" to "surveillance frequency" throughout the document to achieve consistency with NUREGs 1430-1434 as noted in the footnote on Page 2.
Page 4, "Purpose of this Regulatory Guide, Last Paragraph	While the guide at hand focuses on changes to AOTs and STIs, it is understood that other type changes to the Technical Specifications can also utilize the guidance; this should be better emphasized in this section. It is recommended that the second sentence of his paragraph, which deals with other types of TS changes, be moved to the end of the section as a stand-alone paragraph.
Page 4, "Purpose of this Regulatory Guide," Last Paragraph	The last sentence in this paragraph, which discusses the possibility of additional or revised guidance for plants licensed under 10 CFR 52, should be removed. This issue is being addressed in separate venues, and a Commission-level decision may be forthcoming. The industry suggests that such statements not be incorporated into regulatory guides until the decisionmaking process is complete.
Page 4, "Scope of Regulatory Guide," Last Paragraph	The industry appreciates that the RG has been revised to explicitly address both permanent and one-time changes.
Page 5, "Risk-Informed Philosophy," Third Paragraph	There appears to be a philosophical difference in approach between DG-1227 and DG-1226 (RG 1.174) when it comes to treatment of the "traditional engineering" aspects of risk-informed decisionmaking. RG 1.174 states that PRA can "provide insights into whether the extent of defense-in-depth is appropriate to ensure protection of public health and safety. However, to address the unknown and unforeseen failure mechanisms or phenomena, traditional defense-in-depth considerations should be used or maintained." DG-1227, on the other hand, states that "risk analysis techniques can be, and are encouraged to be, used to help ensure and show that these [traditional engineering] principles are met." This seems inconsistent; further, Section 2.2.1 of DG-1227 appears to actually use the PRA to provide insights, not to "show" that the principles are met, which is more consistent with the RG 1.174 approach.
Page 5, "Risk-Informed Philosophy"	While this section discusses the five principles, there is no specific reference to Figure 1, which depicts these principles, and the term "Integrated decisionmaking" is never used. It is recommended Figure 1 be specifically referenced, and that "Integrated Decisionmaking" as portrayed in Figure 1 also be mentioned.
Page 5, "Risk-Informed Philosophy," Items 2 and 3	For items 2 and 3 change "Regulatory Position 2.2" to "Regulatory Position 2.2.1" and "Regulatory Position 2.2.2," respectively.

Page 6, Element 1	The implied stipulation for the licensee to directly describe how the proposed TS change meets the objectives of the PRA Policy Statement would be more clear if a reference were made to the guidance under Element 1 of Section C, "Regulatory Position." It is recommended the second to last sentence be revised to read "The licensee should describe the proposed change and how it meets the objectives of the Commission's PRA Policy Statement, including enhanced decisionmaking, more efficient use of resources, and reduction of unnecessary burden as provided below in Sections 1.1.1, 1.1.2, and 1.1.3."
Page 8, Section 2, First Paragraph	The implied need for the applicant to directly evaluate compliance with the NRC Safety Goal Policy Statement rather than just with the acceptance guidelines of the regulatory guide seems an unnecessary burden for the licensee. The first sentence should be revised to read "The licensee should examine the proposed TS change to verify that it meets existing applicable rules and regulations as expressed through the acceptance guidelines given in this regulatory guide."
Page 9, Element 2, Last Paragraph	The meaning of "STS" should be defined.
Page 10, Section 2.2.1, Fourth Bullet	The fourth bullet should be modified unless it is deemed credible for changes to AOTs to introduce a new CCF mode, as opposed to changing the magnitude of CCF rates.
Page 12, Section 2.3, Tier 3 Heading	To achieve better consistency with established (a)(4) guidance, the industry suggests changing the first sentence of this section such that "evaluated before performing any maintenance activity" is replaced with "assessed and managed."
Page 12, Section 2.3, Tier 3 Heading	Add "and demonstration that a licensee meets the (a)(4) requirements is sufficient for Tier 3 assessments" to the end of the first sentence of the first paragraph.
Page 12, Section 2.3, Tier 3 Heading	The last two paragraphs under the Tier 3 heading do not appear to be relevant to Tier 3 exclusively. As such, the information should be relocated to the appropriate sections on Tiers 1, 2, or 3; alternatively, a separate heading could provide additional clarity. Additionally, the discussion should be revised to specify applicability of Regulatory Position 2.3.1 to any tiers. It is suggested that Regulatory Position 2.3.1 applies only to Tier 1.
Page 12, Section 2.3, Tier 3 Heading, Second Paragraph	In the second sentence, "in general" should be changed to "specifically."
Page 12, Section 2.3.1	In the heading for Section 2.3.1, the word "acceptability" should be changed to "adequacy" to achieve consistency with other NRC documents, such as RG 1.200. This terminology should be similarly aligned throughout the document.
Page 13, Section 2.3.2, Second Paragraph	As written, the first sentence could be interpreted as equating Level 2 analysis with LERF. Suggest changing the sentence to read "Evaluations of CDF and LERF should be performed to support any risk-informed changes to TS."
Page 13, Section 2.3.2, Second Paragraph	For improved clarity, the second sentence should be revised to read "The scope of the analysis should include those hazard groups that have a significant impact on the decision."
Page 13, Section 2.3.1, Last Paragraph	The discussion on technical adequacy should be enhanced to include guidance on expectations for capability categories for the supporting requirements from RG 1.200. A concise discussion is given in DG-1226 and could be replicated here.

Page 13, Section 2.3.3.1	For clarity, in the first sentence, "involved" should be revised to read "involved in the change."
Page 14, Section 2.3.3.1, First Bullet in Second Bullet List	For clarity, "AOT" should be revised to read "extended AOT" in the parenthetical phrase.
Page 14, Section 2.3.3.1, Third to Last Full Paragraph on Page	"Section A.1.3.2" should be changed to "Section A-1.3.2."
Page 15, Section 2.3.3.2, Last Paragraph	"Section A.2" should be changed to "Section A-1.3.2."
Page 16, Section 2.3.3.4, Second Paragraph	This section should refer to the guidance in the ASME/ANS PRA Standard and otherwise discourage the use of pre-solved cutsets.
Page 16, Section 2.3.4, Item 1	It is recommended that the last sentence of Item 1 be changed to read "If the risk evaluation is marginal or exceeds the guidelines for a proposed AOT increase and the systems involve those needed for shutdown (e.g. residual heat removal systems, auxiliary feedwater systems, service water systems), the licensee may want to perform comparative risk evaluations of continued power operation versus plant shutdown."
Page 17, Section 2.3.4, Item 2	For licensees considering the zero maintenance option, it may be helpful to add the following after the second sentence: "Note that the stated acceptance criteria are based on a baseline CDF with 'nominal expected equipment unavailabilities.'"
Page 17, Section 2.3.4, Item 5	Change "Regulatory Positions 2.3.7 and 4.1" to "Regulatory Positions 2.3.7 and 4."
Page 18, Section 2.3.5	Section 2.3.5 of the Regulatory Position should refer to NUREG-1855 and describe how uncertainty analysis should support risk-informed technical specification applications. A hypothetical example of application of NUREG-1855 to a completion time extension was prepared for a joint NRC/EPRI workshop on NUREG-1855 and may be helpful to consult.
Page 18, Section 2.3.5, Second to Last Paragraph	The last sentence in this paragraph should be revised to remove the phrase "applicant will have to." The industry suggests revising the sentence to read "Applicant-provided justification may be appropriate."
Page 20, Section 2.3.7.2, Key Component 1 Heading	It appears that 10 CFR 50.65(a)(4) is inadvertently mistyped as 10 CFR 50.65(a)(3).

Page 22, Quantitative Acceptance Guidelines	The industry appreciates that, for one-time changes, different acceptance guidelines that are consistent with NUMARC 93-01 have been added. However, for permanent changes, the acceptance guidelines are structured differently. For example, for one-time changes, there are two ICCDP thresholds (i.e., 10^{-6} and 10^{-7}). This is consistent with both NUMARC 93-01 and the Region 2/Region 3 demarcations from RG 1.174 in that the limit is treated as permeable if additional actions are taken. However, for the permanent changes, only one threshold is specified (i.e., ICCDP of 10^{-6}), even though ICCDPs below that threshold are allowed without any risk management actions under licensee (a)(4) programs. This is inconsistent with both NUMARC 93-01 and RG 1.174, and is overly restrictive, especially for CTs that are expected to be utilized infrequently. Furthermore, for permanent changes, the ΔCDF/ΔLERF guidelines are also applied. The ΔCDF/ΔLERF guidelines, along with risk monitoring, ensure that there is not a large change in risk to the public over time and should provide a sufficient backstop to allow for an additional ICCDP/ICLERP threshold to be applied, with appropriate considerations of risk management actions that might be applicable above an ICCDP of 10^{-6} or an ICLERP of 10^{-7}
Page 27, References, Reference 13	It should be specified that RG 1.200, Revision 2 is the revision referenced throughout this DG.
Page A-2, Section A-1.1, Fourth Bullet	For clarity, insert the word "equipment" after the word "given."
Page A-2, Section A-1.1, Fifth Bullet	For clarity, insert the words "the plant" after the words "shutting down."