

## NRCREP Resource

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**From:** REED, Joseph [jsr@nei.org] on behalf of BRADLEY, Biff [reb@nei.org]  
**Sent:** Monday, December 22, 2008 12:03 PM  
**Subject:** Industry Comments on Draft Regulatory Guide DG-1200 (Federal Register of June 20, 2008, 73 FR 35171)  
**Attachments:** 12-22-08\_NRC\_Industry Comments on Draft Regulatory Guide DG-1200.pdf; 12-22-08\_NRC\_Industry Comments on Draft Regulatory Guide DG-1200\_Enclosure.pdf

December 22, 2008

6/20/08  
73 FR 35170

Rulemaking, Directives, and Editing Branch  
Office of Administration  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

(9)

**Subject:** Industry Comments on Draft Regulatory Guide DG-1200 (*Federal Register* of June 20, 2008, 73 FR 35171)

### Project Number: 689

The NRC has issued for public comment draft Regulatory Guide DG-1200, "An Approach for determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," and recently extended the public comment period through December 31, 2008. NEI previously submitted comments on the proposed revision to Regulatory Guide 1.200 in a letter dated August 20, 2008 and offers additional comments in the enclosure. Our supplementary comments address the lack of existing guidance for peer reviews of external events PRAs, applicability of large release frequency, independence of peer review team members, and assumptions and sources of uncertainty as discussed in DG-1200.

NEI would like to reiterate that significant issues remain to be resolved with PRA standards addressed in the appendices and with the regulatory implications suggested in the body of the draft Regulatory Guide. We believe the Regulatory Guide should not be issued for use until further progress is made in addressing the issues outlined below.

Please contact me or Victoria Anderson ([vka@nei.org](mailto:vka@nei.org); 202.739.8101) if you have any questions.

Sincerely,

Biff Bradley  
Director, Risk Assessment  
Nuclear Generation Division

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December 22, 2008

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Please contact me or Victoria Anderson (vka@nei.org, 202.739.8101) if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Biff", followed by a stylized flourish that extends to the right and loops back.

Biff Bradley

Enclosure

c: Dr. Gareth W. Parry, U.S. Nuclear Regulatory Commission  
Ms. Mary Drouin, U.S. Nuclear Regulatory Commission  
NRC Document Control Desk

## **Additional NEI Comments on DG-1200**

### **Peer Review for External Events PRAs**

Although DG-1200 endorses the external events portion of the ASME/ANS Combined PRA Standard, there are not yet any standards or guidance documents available to facilitate the peer review of external events PRAs. The NRC should extend the implementation period for RG 1.200, Rev. 2 to allow such guidance to be developed before licensees are required to address RG 1.200, Rev. 2 in risk-informed applications.

### **Application of Large Release Frequency**

The terms “large release frequency” (LRF) and the subset term “large late release” are used throughout DG-1200. However, the applicability of the terms is not sufficiently explained in DG-1200. It is appropriate to include large release determination within a Level 2 PRA, and such information is needed for DC/COL applications. However, the current treatment of large late release in DG-1200 suggests the following expectations:

- In Section 1.2, Table 1 portrays a Level 2 analysis as being a necessary element of a PRA; moreover, a PRA that is missing this element “would not be considered a complete PRA.”
- Section 1.1-2 gives a description for Level 2 Technical Elements. This includes the stipulation that a determination is made “whether a...large late release occurs,” and also includes a quantification evaluation that “allows for identification of the LERF or LRF.”

Thus, the resulting implication is that a PRA without such treatment of large late release is not complete. The only caveat to this assertion is found in Section 3.2, where it is stated that “if the risk application is designed around using the acceptance criteria of RG 1.174, the evaluations of CDF,  $\Delta$ CDF, LERF and  $\Delta$ LERF should be performed with a full scope PRA...” The implication is that large late release need not be evaluated for RG 1.174 applications. This is consistent with the assertion given in Section 1.1 under “Risk Characterization,” which states that CDF serves as a surrogate for latent fatality risk. The surrogate argument is further strengthened by the very small changes allowed in CDF for many risk-informed applications such as those under RG 1.174.

DG-1200 fails to clarify the restriction of large late release determination to DC/COL applications, even though the current ASME/ANS Combined PRA Standard does not treat large late release, making a peer review against such an attribute impossible at this

time. Note that RG 1.200, Rev. 1 clarified that “CDF and LERF are generally the metrics used in decision making for operating reactors licensed under Part 50” in Section 1.1. This caveat is absent from DG-1200. Thus, it could be inferred that the proposed RG 1.200, Rev. 2 would require inclusion of large late release in the PRA model for all risk-informed applications. Moreover, the scope of such activities could be significantly broadened if the phrase “Risk-Informed Activity” replaces “Risk-Informed Application” as discussed in NEI’s August 20, 2008 letter transmitting comments on DG-1200. These interpretations would severely hamper risk-informed regulation as it exists today.

### **Independence of Peer Review Team Members**

Section 2 delineates stipulations on review team independence in several places. The ideal and absolute “independent with no conflict of interest” criteria for peer review team members can be difficult to achieve if technically qualified members are also desired, as corporate structures allow multiple nuclear power stations to be owned by a single utility and PRA consulting companies and utilities frequently change employees. The following revisions would alleviate these concerns while retaining language conveying the intent of peer review team independence:

- In the third paragraph of Section 2.2, replace the second sentence with “To avoid any perception of a technical conflict of interest, the peer reviewers will not have performed any actual work on the major portions of the PRA under their individual purview.”
- In Table 9 in Section 2.2, replace “independent with no conflict of interest” with “independent with no conflict of interest that may influence the outcome of the peer review.”

### **Assumptions and Sources of Uncertainty**

NEI has previously indicated that the use of self assessments (Appendix B) was expected to be a one-time occurrence following initial issuance of RG 1.200, Rev 1, and that Appendix B could be deleted from future revisions. However, if the intent is to retain the usability of the self assessment provisions, the regulatory positions given for a number of SRs dealing with assumptions and sources of uncertainty need to be modified if Appendix B to DG-1200 is to be maintained as a viable option to demonstrate that the PRA is adequate to support a risk-informed application. A fairly detailed discussion on assumptions and sources of uncertainty, including definitions for the terms “assumption” and “source of model uncertainty,” as well as those same terms preceded by the word “key,” was presented in the July 27, 2007 NRC memo, “Notice of Clarification to Revision 1 of Regulatory Guide 1.200.” The clarification memo states that the language

of the SRs dealing with assumptions and uncertainty refer only to the PRA model or base case since there is no specific application inherent in the ASME PRA Standard. The recommendations of the clarification memo have essentially been incorporated into the language of the ASME/ANS Combined PRA Standard against which the DG-1200 states “no objection” for the definitions in the proposed standard (Section 1-2.2) as well as for the language of the related SRs (IE-D3, AS-C3, SC-C3, SY-C3, HR-I3, DA-E3, IF-F3, QU-E1, QU-E2, QU-E4, QU-F4, LE-F3, LE-G4). None contain the word “key” anymore, and thus properly relate to the base case PRA.

However, Table B-4 treats most of the related SRs differently by maintaining without objection under “Industry Self-Assessment Actions” that “key” assumptions and “key” sources of uncertainty be documented for most of the related SRs (specifically, IE-D3, AS-C3, SC-C3, SY-C3, HR-I3, DA-E3, QU-E1, LE-G4). To be consistent with the requirements of a peer review as endorsed in Appendix A for a base case PRA, these SRs in Table B-4 of Appendix B for self-assessment need to be modified by deletion of the word “key.” Moreover, the sentence in the “Regulatory Position” column that reads “See staff position on definition of key assumption and key source of uncertainty in Appendix A” should be deleted or modified to refer instead to the definitions for these terms that are contained in the proposed Combined ASME/ANS Standard. There are no definitions given for the cited terms in Appendix A.

Based on the discussion above, the following changes to Table B-4 are proposed:

IE-D3	Replace wording after “No objection with clarification” with “Delete the word ‘key’ (twice) from the industry self-assessment action to be consistent with the definitions of ‘key assumptions’ and ‘key sources of uncertainty’ and with the requirements of SR IE-D3 given respectively in Section 1-2.2 and Table 2-1.4.1-2(d) of the ASME/ANS Combined PRA Standard.
AS-C3	Replace wording after “No objection with clarification” with “Delete the word ‘key’ (twice) from the industry self-assessment action to be consistent with the definitions of ‘key assumptions’ and ‘key sources of uncertainty’ and with the requirements of SR AS-C3 given respectively in Section 1-2.2 and Table 2-1.4.2-2(c) of the ASME/ANS Combined PRA Standard.
SC-C3	Replace wording after “No objection with clarification” with “Delete the word ‘key’ (twice) from the industry self-assessment action to be consistent with the definitions of ‘key assumptions’ and ‘key sources of uncertainty’ and with the requirements of SR SC-C3 given respectively in Section 1-2.2 and Table 2-1.4.3-2(c) of the ASME/ANS Combined PRA Standard.
SY-C3	Replace wording after “No objection with clarification” with “Delete the word ‘key’ (twice) from the industry self-assessment action to be consistent with the

	definitions of 'key assumptions' and 'key sources of uncertainty' and with the requirements of SR SY-C3 given respectively in Section 1-2.2 and Table 2-1.4.4-2(c) of the ASME/ANS Combined PRA Standard.
HR-I3	Replace wording after "No objection with clarification" with "Delete the word 'key' (twice) from the industry self-assessment action to be consistent with the definitions of 'key assumptions' and 'key sources of uncertainty' and with the requirements of SR HR-I3 given respectively in Section 1-2.2 and Table 2-1.4.5-2(i) of the ASME/ANS Combined PRA Standard.
DA-E3	Replace wording after "No objection with clarification" with "Delete the word 'key' (twice) from the industry self-assessment action to be consistent with the definitions of 'key assumptions' and 'key sources of uncertainty' and with the requirements of SR DA-E3 given respectively in Section 1-2.2 and Table 2-1.4.6-2(e) of the ASME/ANS Combined PRA Standard.
QU-E1	In the "Regulatory Position" column replace the second paragraph with "In the industry self-assessment action, update the title 'ASME PRA Standard Addendum B' with 'ASME/ANS Combined PRA Standard.'"
LE-G4	Replace wording after "No objection with clarification" with "Delete the word 'key' (twice) from the industry self-assessment action to be consistent with the definitions of 'key assumptions' and 'key sources of uncertainty' and with the requirements of SR LE-G4 given respectively in Section 1-2.2 and Table 2-1.4.9-2(g) of the ASME/ANS Combined PRA Standard.