FRAMATOME ANP

An AREVA and Siemens Company

FRAMATOME ANP, Inc.

12/18/02
67FR77530
(4)

February 28, 2003
FANP-03-634

Rules and Directives Branch
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: Comments on Draft Regulatory Guide DG-1122, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities"

The NRC has published the subject Draft Regulatory Guide DG-1122, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," for public comment. I have been involved with ASME effort (under the auspices of the Committee on Nuclear Risk Management) to provide comments on Appendix A, which deals specifically with the endorsement of the ASME PRA Standard. Except for some substantial issues, I will not replicate the details of the ASME response. Specific comments are provided as an attachment to this letter.

Thank you for the opportunity to provide comments on this important draft regulatory guide, and for considering them as DG-1122 moves towards approval for interim use.

Sincerely,

Stanley H. Levinson, Ph.D., P.E.
Advisory Engineer

E-RIDS=ADM-03
Cell=T.Clark (TXC1)
M.T. DROUIN (MXD)

Template=ADM-013

FRAMATOME ANP, Inc.
3315 Old Forest Road, P.O. Box 10935 · Lynchburg, VA 24506-0935
Tel: 434-832-3000 Fax: 434 832 0622 www.us.framatome-anp.com

ATTACHMENT

Comments on Draft Regulatory Guide DG-1122, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,"

Submitted by Stanley H. Levinson, Framatome ANP, Inc., 3315 Old Forest Road, Lynchburg, VA 24501, Stanley.Levinson@framatome-anp.com, 434-832-2768

1. Section B/Figure 1

   The figure, showing the relationship between DG-1122 and other risk-informed guidance documents, fails to show the relationship to Reg. Guide 1.174 [1]. The principles and philosophy of RG 1.174 are central to any risk-informed application. The purpose of DG-1122 is to provide the mechanism to show "technical adequacy" of a PRA that is used to support a risk-informed application. Without the inclusion of RG 1.174 in the figure, it appears that a disproportionate amount of emphasis is being placed on DG-1122.

2. Section 1.2.1/Quantification

   It is not practical to suggest that quantification be performed without any truncation limit; see last sentence of "Quantification." Without a truncation, some quantification codes would be overwhelmed with a very large number of cut sets. If a criterion is desired, it should be the comparison of CDF with different truncation limits ... not "no truncation." The last sentence should be deleted.

3. Section 1.2.6/Documentation

   The definition of "assumption" that is included in the footnote is too broad. During the performance of a PRA, there are many decision and judgments that are made that are not necessarily documented. It is agreed that the major and key assumptions need to be documented and justified, but the text in DG-1122 does not establish a reasonable lower bound on the importance of an assumption and its need to be documented.

   The broad definition of "assumption" is repeated in Section 1.3/Table 2 (under Interpretation of Results for both Level 1 PRA and Level 2 PRA) and in Section 1.3/Table 3 (under Quantification for Internal Fire Analysis). This time the term "key assumptions" is used. The term "key assumptions" is not consistent with "decision and judgments that were made in the course of the analysis."

4. Section 1.3/Table 2/Level 2 PRA/Quantification

   This table cell makes reference to "large early release" and "large late release." Large early release is discussed as one of the metrics (e.g., LERF) in Section 1.1. However,

large late release (LLR) is not a metric that is generally used or quantified. LLR should not be maintained in the Reg. Guide as a metric (comparable to CDF and LERF). LLR is also mentioned in Section 1.2.2 (subsections Source Term Analysis and Quantification).

5. Sections 2.2 & Section 4.2

   Both these Sections make reference to Regulatory Position 2.4, which does not appear to exist in DG-1122.

6. Table 5 on page 16 precedes Table 4 on page 17.

7. Table 5/Last item of bullet 5 & Section 2.2/team qualifications

   In both of these places in DG-1122, the requirement for a peer reviewer to have had absolutely nothing to do with the reviewed PRA may be too strong. The pool of reviewers is already limited without such a strict interpretation. If a "conflict" was discovered during a Peer Review, that reviewer could (1) not be permitted to lead the review of the affected PRA element(s) and (2) not be permitted to take part in the consensus process for the affected PRA element(s). Such a conflict should be recorded and documented. In some cases, the work on a PRA occurred many revisions ago, so that there is no true conflict of interest.

8. Table 4/Team Qualifications

   In the second bullet, it is required that all team members have expertise in **all** the technical elements of a PRA, including integration. This could severely limit the number of "qualified" reviewers. Many suitable reviewers might not be considered "experts" in every aspect of PRA. Teams need to be balanced and have the necessary overall expertise in the elements of a PRA; however, all the expertise need not reside in every one of the reviewers.

9. Section 4.3/Licensee Submittal Documentation

   It is recommended that the documentation required for the first bullet (a description of the process for maintenance, update, control of the PRA) need not be repeated for each application. Instead, it is recommended that this documentation be included in Section 4.2/Archival Documentation, indicating that once the process is described, that is sufficient documentation for subsequent applications.

10. Appendix A

    Appendix A (endorsement of the ASME PRA Standard [2]) is covered in detail by the comments provided by ASME. Without reiterating the arguments made in the ASME comments, two of the most significant concerns are:

- the adoption of the definition for "dominant," "significant," and "important." It is understood that the NRC has been working to develop alternatives to this definition and it is expected that the "monolithic" definition included in DG-1122 will be changed.

- the requirement that Peer Reviews be performed after PRA maintenance. It is understood that the NRC intends to change the language in Appendix A pertaining to when a Peer Review is required, e.g., after PRA maintenance, after PRA update. It is recommended that the NRC follow through with this anticipated change.

11. Appendix B/Report Section 1.1/Scope

The Commentary/Resolution requires a Peer Review for PRA maintenance. This requirement has been challenged in Appendix A (see item 11 and ASME comments on DG-1122). The resolution for Appendix A should be applied to Appendix B.

References

[1] "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Office of Nuclear Regulatory Research, U.S. NRC, Regulatory Guide 1.174, Revision 1, November 2002.

[2] "Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications," American Society of Mechanical Engineers, ASME RA-S-2002, April 2002.