

February 16, 2006

Kevin Ennis
ASME
3 Park Ave.
New York, New York 10016

Mary Beth Gardner
American Nuclear Society
555 North Kensington Ave.
LaGrange, Illinois 60526

SUBJECT: PRA STANDARDS DEVELOPMENT

Dear Mr. Ennis and Ms. Gardner:

As you are aware, the US Nuclear Regulatory Commission (NRC) requested the staff to provide a plan to achieve probabilistic risk assessment (PRA) quality by December 2008. In the plan, the Commission directed the staff to (1) identify the current and anticipated regulatory activities where PRA quality is an issue, and (2) identify the PRA standards and associated guidance that are needed to address PRA quality. Further, the Commission recommended that the staff consider a phased approach such that regulatory activities (e.g., licensing changes) would continue while the standards and guidance documents are developed and implemented. The staff plan is documented in SECY-04-0118, dated July 13, 2004. The success of this plan is dependent on the development and issuance of PRA standards by ASME and American Nuclear Society (ANS).

The staff, in its plan, identified the regulatory activities where PRA standards and associated guidance are needed. These activities, at a minimum, include operational uses, the reactor oversight process, license amendments, new or revised regulations, and new reactor licensing. The needed PRA scope for these activities is in line with the PRA standards being developed by ASME and ANS: Level 1/Large Early Release Frequency (LERF) for full-power and internal events, external events, low power and shutdown (LPSD), and internal fires. Also in the plan, the staff laid out a detailed schedule for development of the standards and associated guidance documents that met the Commission requested deadline of December 2008. This schedule was developed based on input from ASME, ANS, and the Nuclear Energy Institute (NEI).

At the time the plan was issued, 4½ years were available to complete the development, issuance, staff endorsement, and industry implementation of the standards. As the first half of this time period ends, we believe it important to assess the status and determine if the milestones described in the plan will be met. A summary of the schedule of each standard is provided in the enclosed table and the status of each standard is summarized below.

- ASME Level 1/LERF standard: the plan recognized that this standard had been issued and endorsed by the staff in Appendix A to Regulatory Guide (RG) 1.200. ASME has revised the standard and issued Addendum B per its schedule (July 2005). The staff is reviewing this addendum and will revise Appendix A to RG 1.200, as needed.
- NEI self-assessment process: the plan recognized that this guidance had been issued and endorsed by the staff in Appendix B to RG 1.200. NEI is revising the guidance and is planning to issue it in early 2006. The staff will then review and revise Appendix B to RG 1.200, as needed.
- ANS external events standard: the plan recognized that this standard had been issued and endorsed by the staff in DG-1138. ANS is revising this standard and plans to issue it in March 2006 for trial use. The staff will then review and revise DG-1138.
- ANS internal fire standard: the plan assumed a June 2006 date for ANS issuance. It is the staff's understanding that this standard will not be issued before December 2006. This standard needs to be reviewed and endorsed by the staff prior to December 2008 to assure proper implementation PRA quality.
- ANS LPSD standard: the plan assumed a June 2005 date for ANS issuance. It is the staff's understanding that this standard is essentially complete but that there is disagreement on the scope and therefore, whether to issue the standard. This standard also needs to be reviewed and endorsed by the staff prior to December 2008 to assure proper implementation PRA quality.

ASME, ANS, and the various participants on the committees and working groups have dedicated a considerable amount of time and effort to developing these standards which are a key element to the success of achieving PRA quality. However, some of the dates for issuing the needed standards have not been met. At this time, we believe that the deadline requested by the Commission is still achievable if the remaining standards are issued by June 2007. If this date is met, it will not be necessary for the staff to "develop the necessary standards not developed by a Standard Developing Organization (e.g., ASME)," as proposed to the Commission in SECY-04-0118. Consequently, it is our intent to continue to work with both societies to achieve the Commission's December 2008 deadline. However, to ensure that the above dates are met, we recommend, in this short timeframe, (1) that only the necessary scope for each standard be pursued, and (2) that the Committees and working groups not attempt to resolve every "issue" prior to initial issuance. For example with regard to scope, there are alternative methods to obtain risk insights that are not PRA (or quantitative) approaches. A qualitative approach for configuration control during LPSD is a good example. Although guidance for configuration control is useful, it is not an element of a LPSD PRA standard. We recommend that this kind of guidance, whether for LPSD, internal fire, or external events, be pursued separately or at a later date, so that the schedule for the respective PRA standard is not impacted. With regard to resolving issues, we recognize that there are issues that will need further effort to resolve. We suggest a similar approach to the ASME Level 1 standard. This standard was issued, tested, piloted, staff comments provided, and the issues were then further discussed and resolved. Two addendums were subsequently issued based on insights and lessons learned. In fact, significant changes to the ASME Level 1 standard occurred from Addendum A to Addendum B. We believe that this process – issuing the standard so it can be used and then revised as insights are gained – is the most efficient and effective approach to identifying and resolving issues.

In addition, on September 27, 2005, I sent a letter to ASME and ANS discussing our available resources, particularly with regard to an integrated standard. In my letter, I discussed the NRC's limited resources and our need to focus on completing the ongoing standard efforts. At the September 29, 2005, meeting of the Nuclear Risk Management Coordinating Committee, it is my understanding that a different approach was proposed for the integrated standard. This new approach would (1) ensure consistency of the ASME and ANS standards with respect to definitions, capability categorization, format, structure of requirements, and level of detail, and (2) maintain the infrastructure established by the current standards. With this approach, we believe that the integrated standard would occur in a more expeditious and efficient manner while having a minimal resource impact. Further, this new approach appears to alleviate our concern about having multiple standards of the same scope and therefore having to maintain staff endorsement of multiple, same-scope standards. Our understanding of this approach and staff endorsement via RG 1.200 is shown in the enclosed figure.

In this approach, ANS, for example, would initially issue a standard (e.g., internal fire) for "trial use." The staff's review and endorsement would be documented in an NRC draft guide. Based on insights from tests and pilots and on public and NRC comments, the "trial use" standard would be revised. However, this revised standard would not be issued as an ANS/ANSI standard, but would be incorporated into the ASME Level 1 Integrated standard. The staff would update RG 1.200, Appendix A, which would provide the staff position on the integrated standard. This process would have negligible impact on the staff resources in the short term and therefore, we would be able to support an integrated standard with such an approach.

As noted above and in my September 27, 2005, letter, PRA standards for Level 1/LERF, full power, LPSD, internal and external events are necessary to support NRC regulatory activities. Further, based on our current information that the remaining standards for LPSD and internal fires are planned to be issued by ANS in the next nine months, we believe that the Commission December 2008 deadline is still achievable. If our understanding is not correct, please notify me so that we can revise the staff plan for achieving PRA quality accordingly and update the Commission. Both societies have been very responsive to these needs in developing the PRA standards. We look forward to continuing to work with you. If you have any questions, please contact Mary Drouin of my staff at (301) 415-6675.

Sincerely,

/RA/

Charles E. Ader, Director
Division of Risk Analysis and Applications
Office of Nuclear Regulatory Research

Enclosures:
As noted

cc: R. Weilder, ASME
J. Mallay, ANS
R. Grantom, ASME
W. Burchill, ANS
R. Barrett, NRC

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Table 1 Summary of Standards and Status

Standard/milestone	Schedule in plan	Current status*
ASME: Level 1/LERF • Issue Addendum A • NRC endorsement	completed	<ul style="list-style-type: none"> • Addendum B issued • RG 1.200, Appendix A, Rev. 1, December 2006
NEI Self-Assessment • Issue Revision 1 • NRC endorsement	completed	<ul style="list-style-type: none"> • Revision 2 to be issued, March 2006 • RG 1.200, Appendix B, Rev. 1, December 2006
ANS External Events • Issue Revision 0 • NRC endorsement	<ul style="list-style-type: none"> • completed • December 2004 	<ul style="list-style-type: none"> • Issue Rev. 1 <ul style="list-style-type: none"> -- Trial use, February/March 2006 -- ANSI standard, July-September 2006 • Rev. 0: August 2004, DG 1138 • Rev. 1: Dec 2006 (trial use), April 2007 (ANSI std)
ANS LPSD • Issue Revision 0 • NRC endorsement	<ul style="list-style-type: none"> • June 2005 • June 2006 	<ul style="list-style-type: none"> • Issue Rev. 0, June 2006 (for trial use) • Rev. 0, draft guide (January 2007)
ANS Internal Fire • Issue Revision 0 • NRC endorsement	<ul style="list-style-type: none"> • June 2006 • June 2007 	<ul style="list-style-type: none"> • Issue Rev. 0, December 2006 (for trial use) • Rev. 0, draft guide (January 2008)
<p>Note: * The dates are based on the most recent information received from ASME, ANS, and NEI and are subject to change depending on committee members' comments and public comments received on the standards.</p>		

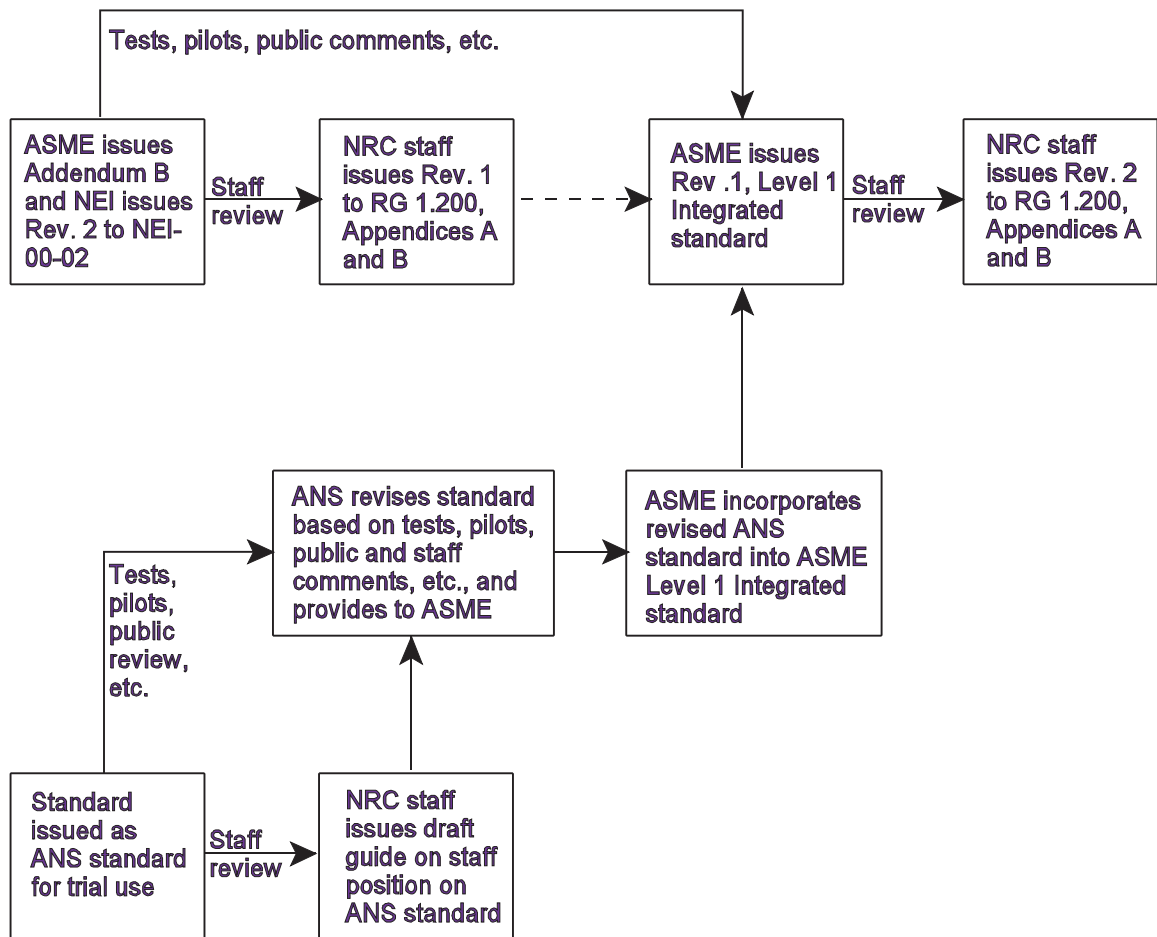


Figure 1 Proposed Process To Achieve Integrated Standard and Staff Endorsement