

March 7, 2003

MEMORANDUM TO: Hossein Hamezhee, Acting Chief
Probabilistic Risk Analysis Branch
Division of Risk Analysis & Applications

THRU: Mary T. Drouin / RA /
Probabilistic Risk Analysis Branch
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FROM: Amarjit Singh / RA /
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SUBJECT: MEETING SUMMARY OF PUBLIC WORKSHOP
REGARDING THE USE AND APPLICATION OF THE ASME
CONSENSUS PRA STANDARD AND THE NEI PEER REVIEW
PROCESS (I.E., DG-1122, "DETERMINING THE TECHNICAL
ADEQUACY OF PRA RESULTS FOR RISK-INFORMED ACTIVITIES")
JANUARY 9, 2003, U.S. NUCLEAR REGULATORY COMMISSION,
TWO WHITE FLINT NORTH (AUDITORIUM)

On January 9, 2003, a public workshop was held at NRC headquarters to allow stakeholders to discuss and solicit comments on the approach and guidelines in DG-1122, "Determining the Technical Adequacy of PRA Results for Risk-Informed Activities," and the associated draft Standard Review Plan (SRP) Chapter 19.1. This public workshop was one in a series of workshops and teleconferences held with stakeholders on this subject. The attachments contain the meeting agenda and Attachment 2 the list of attendees. The principal topics of discussion included:

- Background
- Approach to guidelines and staff position on DG-1122 and SRP Chapter 19.1
- Solicit and gather information from stakeholders
- Discussion on potential pilot(s)
- Appendix A: Staff position on ASME Standard
- Appendix B: Staff Position on NEI Peer Review and Self Assessment
- Discussion on Definitions of "Important," "Significant," and "Dominant"
- Schedule

Each of these topics is discussed below.

Background

Since the PRA Policy Statement was issued, a number of documents have been written that provide guidance on the use of PRA information in reactor regulatory activities. These include Regulatory Guide 1.174 and SRP Chapter 19 which provide general guidance on applications that address changes to the licensing basis, and regulatory guides for specific applications such as for inservice testing, inservice inspection, quality assurance, and technical specifications. SRP chapters were also prepared for each of the application-specific regulatory guides with the exception of quality assurance. The staff initiated an effort in drafting a regulatory guide to provide the NRC position on PRA quality and PRA standards. DG-1122 was issued for 60 day public review and comments which ends on February 28, 2003.

PRA standards have been under development by the American Society of Mechanical Engineers (ASME) and American Nuclear Society (ANS). On April 5, 2002, ASME issued ASME RA-S-2002, "Standard for Probabilistic Risk Assessment for Nuclear Power Plant Applications," a standard for a full-power, internal events (excluding fire) level 1 PRA and a limited level 2 PRA. The staff's positions on the requirements included in RA-S-2002 are provided in Appendix A to DG-1122.

On August 16, 2002, the Nuclear Energy Institute (NEI) submitted draft industry guidance for self-assessments (process and actions) to address the use of industry peer review results in demonstrating conformance with the ASME PRA standard. NEI has indicated that this additional guidance will be incorporated into a revision of NEI-00-02, "NEI Peer Review Process." The staff provided its positions on the guidance included in NEI-00-02, the self-assessment process and the self-assessment actions, in Appendix B to DG-1122.

Purpose of DG and SRP

The purpose of this regulatory guide is to provide guidance to licensees in determining (1) the technical adequacy of PRAs used in risk-informed integrated decision making processes, (2) the documentation needed in submittals to address "PRA Quality" in risk-informed regulatory activities, and (3) the staff's positions regarding the endorsement of industry standards and peer review guidance. The staff discussed the guidance in four areas.

- A minimal set of functional requirements of a technically acceptable PRA
- NRC position on consensus PRA standards and industry PRA program documents
- Demonstration that the PRA (in toto or specific parts) used in regulatory applications is of sufficient technical adequacy
- Documentation that the PRA (in toto or specific parts) used in regulatory applications is of sufficient technical adequacy

Chapter 19.1 of the SRP was also discussed. SRP chapter 19.1 is to provide guidance to the staff on how to determine that the PRA providing the results being used in the decision is technically adequate.

DG-1122 and the associated SRP solely address the issue of determining the technical acceptability of the PRA for an application. This regulatory guide is a supporting document to other NRC regulatory guides that address risk-informed activities.

Some comments were made by stakeholders regarding Regulatory Positions 1 through 3 in DG-1122. Regarding the Level 2 technical elements of Position 1, there was discussion on large late release, i.e., on the use of a level 2 metric beyond large early release frequency (LERF). NRC staff clarified that no new metric was being introduced in DG-1122, but indicated that some additional work may need to be done in the future regarding late release. There was also discussion on whether there should be an identification by NRC staff of a specific category of a PRA for a particular application. The staff clarified that this was not the purpose of DG-1122, but that DG-1122 would help the applicants identify what category PRA they have. It is intended that the application-specific regulatory guides address differences in PRA-related information needed for different applications.

There was a substantial discussion between the staff and industry regarding Position 4 in DG-1122 concerning documentation needs in submittals. The staff emphasized that to facilitate its review of risk-informed submittals, the licensee should provide sufficient documentation to demonstrate that the parts of the PRA used in a particular regulatory application are of adequate quality to support the analysis. The archival documentation kept on-site by the licensee associated with a specific application is expected to include enough information to demonstrate that the scope of the review of the base PRA is sufficient to support the application.

Appendix A NRC Regulatory Position on ASME PRA Standard

The NRC staff reviewed the ASME RA-S-2002 against the characteristics and attributes for a technically acceptable PRA. The staff's position on each high-level requirement or supporting requirement in ASME RA-S-2002 is categorized as "no objection," "no objection with clarification," or "no objection subject to the following qualification." These terms are defined as follows:

- No objection : the staff has no objection to the requirement.
- No objection with clarification : the staff has no objection to the requirement. However, certain requirements, as written, are either unclear or ambiguous and therefore, the staff has provided its understanding of these requirements.
- No objection subject to the following qualification : the staff has a technical concern with the requirement and has provided a qualification to resolve the concern.

A stakeholder comment was made that it did not seem appropriate for the NRC to take any exceptions to ASME RA-S-2002 since the NRC participated in its development, and the document has been referred to as a consensus standard. NRC staff responded that the few exceptions remaining that are indicated in Appendix A to DG-1122 were made known to ASME throughout the development process of the standard, and that the goal is to eventually have a

true consensus standard for which there are no exceptions, however, the NRC has a regulatory responsibility which may result in exceptions.

ASME Presentation

An ASME representative made a presentation stating that the staff has identified a number of areas in the ASME Standard, RA-S-2002, where it is agreed that improvements need to be made and requested that a meeting be held to resolve these areas. It was stated that the ASME has developed a set of changes for the next version of the standard that should resolve 90% of the NRC comments. It was stated that there are very few comments on which there is technical disagreement, and the ASME intends to have a version of RA-S-2002 for which no NRC clarifications or qualifications are needed. ASME plans to issue an addendum to RA-S-2002 in May 2003.

Appendix B: NRC Position on the NEI Peer Review Process (NEI-00-02), Self-Assessment Process and Actions

NEI-00-02 provides guidance for the peer review of PRAs and the grading of the PRA subelements into one of four capability categories. This document is supplemented by a set of subtier criteria that provide an explanation of the grades (to be included in a revised version of NEI-00-02). NEI has also submitted a licensee self-assessment process with subsequent licensee actions that address those aspects of the ASME PRA standard not addressed by the peer review process and the subtier criteria. Appendix B provides the staff's position on the NEI peer review process, and the proposed self-assessment process and actions. The staff's positions are categorized as discussed above in the section on Appendix A. The staff's positions given in Appendix B to DG-1122 are based on the recognition of the fact that a peer review based on NEI-00-02 has been performed for virtually all the plant PRAs. Therefore, the staff review focused on the self-assessment process (which identifies the differences between the ASME standard and NEI-00-02) and the subsequent actions to be taken by the licensee to address the differences. For future reviews, the staff would have to revisit the regulatory positions in Appendix B as part of the criteria needed for judging whether peer review results cited in applications were sufficient.

Pilots

There was significant discussion at the workshop on potential pilot applications. Stakeholders were interested in the fee waiver issue, especially if the fee would be waived for the total application or only for the parts explicitly involving risk criteria useful for assessing the use of DG-1122. NRC staff stated that the waiver would likely be on the whole application, but that each application for a pilot would have to be evaluated individually. The staff also noted that several pilots were possible, and even desirable, provided that they were in substantially different technical areas involving different plant systems or modes of operation, or were significantly different in scope.

Definitions of Terms "Important," "Significant," and "Dominant"

There was general agreement that more effort was needed on finding consensus definitions for these terms as used in the ASME PRA Standard, RA-S-2002. The NRC staff indicated that it intends to further develop its views regarding these definitions and suggested that a meeting be held in early March to provide an opportunity to discuss the definitions. The ASME representative noted that the ASME is planning to meet in late March, and therefore, an early March meeting with NRC staff would be helpful.

Other issues

Industry representatives reminded NRC staff about a discussion that took place at the last workshop about dropping the requirement for peer review of PRA revisions that fall under the category of "maintenance." NRC staff stated that they had not yet had time to make revisions to DG-1122 to make this change, but agreed that the industry request was reasonable, and it was still the staff's intent to make the change.

A tentative date of March 11, 2003, was agreed on for the next public workshop on the DG-1122 topic.

Schedule

The ASME representative noted that it was ASME's intention to issue an addendum to the ASME PRA standard in May 2003.

NRC staff stated that the plan was to issue DG-1122 as trial for use in June 2003 and would incorporate the ASME addendum.

Attachments: Agenda and the list of attendees

DOCUMENT NAME: g:\singh/DG-122wkshop1.9.03.sumry.wpd

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| DATE | 03/ 07/2003 | | 03/ 07 /2003 | | | |

DG-1122 (An Approach for Determining the Technical Adequacy of PRA
Results for
Risk-Informed Activities) January 9, 2003

AGENDA

MORNING

- 9:00 - 9:15 Welcome, Introduction
- 9:15 - 10:15 Open Discussion on DG-1122 and SRP Chapter 19.1
- 10:15 - 10:45 BREAK
- 10:45 - 11:15 Open Discussion on DG-1122 and SRP Continued
- 11:15 - 11:45 ASME Presentation

- 11:45 - 1:00 LUNCH

AFTERNOON

- 1:00 - 2:30 Open Discussion on Pilots
- 2:30 - 2:50 BREAK
- 2:50 - 3:30 Open Discussion on Definition of Dominant, Significant, and Important
- 3:30 - 4:30 Open Discussion on NEI-00-02 and Self-Assessment Process
- 4:30 - 5:00 Wrap Ups

PUBLIC WORKSHOP

AN APPROACH FOR DETERMINING THE TECHNICAL ADEQUACY OF PRA RESULTS FOR
RISK-INFORMED ACTIVITIES

January 9, 2003

ATTENDANCE

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