

**American Nuclear Society
Risk-Informed Standards Consensus (RISC) Committee
Meeting Minutes
April 5, 2006
9:00 am – 6:00 pm, ASME International
New York, NY**

Members Present: William E. Burchill, *Texas A& M Univ. (RISC Chair)*; Biff Bradley, *NEI*; Allen Camp, *Sandia National Lab*; Mary Drouin, *US NRC*; David Finnicum, *Westinghouse*; John Gaertner, *EPR*; Dennis Henneke, *Duke Power Co.*; Rick Hill, *ERIN*; Kenneth Kiper, *FPL Energy Co.*; Gregory Krueger, *Exelon*; Stanley Levinson, *AREVA NP*; Bijan Najafi, *SAIC*; Gareth Parry, *US NRC*; M. K. (Ravi) Ravindra, *ABS Consulting, Inc.*; Pat Schroeder, *ANS*

Members Absent: Paul Amico, *SAIC* (alternate attended); Robert Bari, *Brookhaven National Laboratory*; Richard Black, *US DOE*; Robert Budnitz, *Lawrence Livermore National Laboratory*; Frederick Emerson, *GE Nuclear Energy*; Wayne Holmes, *HSB Professional Loss Control*; Gene Hughes, *ENTRANCO* (alternate attended); Yehia Khalil, *Yale University*; Mark Rubin, *US NRC*; Jean Savy, *Lawrence Livermore National Laboratory*; Daniel (Bill) Stillwell, *South Texas Project Nuclear Operating Company*

Others Present: Richard Anoba, *Anoba Consulting Services*, Mary Beth Gardner, *ANS*; Dave Miskiewicz, *Progress Energy*

1. Roll Call and Approval of Agenda

Bill Burchill, RISC Chair, opened the meeting at 9:00am and the agenda was approved with no additional agenda items added. With some members attending the concurrent ASME CNRM (Committee for Nuclear Risk Management) meeting, a quorum was not immediately established.¹ Burchill explained to the RISC members the importance of having an alternate and asked that all members appoint an alternate by the next meeting.

Action Item 4/06-01: RISC members without a current alternate, appoint one by next meeting.

Pat Schroeder confirmed that minutes from November 14, 2005, RISC meeting were approved via email and available on the ANS website.

2. Meeting Key Issues and Objectives (11 voting members present)

See Attachment A for slides presented during the discussion.

Bill Burchill reviewed the agenda and highlighted key points using Attachment A.

ANS-58.21, Rev. 1 (external events): Burchill explained the two recent RISC ballots on ANS-58.21, Rev. 1 – 1) consensus ballot of draft as American National Standard, and 2) ballot to require pilot trial of the draft as part of the consensus process. Burchill stated that ANS-58.21 Working Group Chair, Ravi Ravindra, will give a report with a bulk of his presentation on review of concerns raised by the negative ballots. Burchill explained that he had spoken with each negative balloter

¹ The number of RISC voting members present is annotated in each meeting agenda topic reported herein.

personally at some length. He reported that John Gaertner is trying to put together an EPRI-sponsored pilot project for trial use of the standard.

ANS-58.22 (LPSD): Burchill explained that the RISC consensus ballot on ANS-58.22 was nearly equally divided between positive and negative votes. Many of the negative ballots and public comments concerned the structure of the standard, particularly the inclusion of qualitative risk assessment methods. Burchill reported that the ANS-58.22 Working Group had taken significant actions in response to recommendations from the 11/14/05 RISC meeting. Burchill asked ANS-58.22 Working Group Chair, Ken Kiper, to give the RISC his forecast of future plans. Burchill explained that Kiper has reached the end of his three-year term as ANS-58.22 Working Group Chair. Burchill reported that he is looking for a replacement and also for new working group members.

ANS-58.23 (Fire): Burchill reported that the ANS-58.23 draft was submitted to RISC for consensus ballot yesterday (4/4/06). The ANS-58.23 working group has used external reviewers to provide significant input to the group and to review the group's product. Working Group Chair, Dennis Henneke, will provide a more in depth report and schedule for completion.

ANS-58.24 (Level 2): Burchill reported that because Working Group Chair, Mark Leonard, was not able to attend the meeting, Burchill will provide a brief report. Burchill reported that although a letter was previously issued from the NRC stating their inability to support the Level 2 and Level 3 PRA standards, he believes that with more dialog, it's possible that decision may be reversed.

ANS-58.25 (Level 3): Burchill explained that Stanley Levinson will provide a brief report for Keith Woodard, ANS-58.25 Working Group Chair.

NRMCC: Burchill informed the committee that he will discuss agreements that have been made between ANS and ASME in connection with the process to develop an integrated PRA standard which is the principal focus of tomorrow's joint CNRM/RISC meeting. During the joint CNRM/RISC meeting Rick Grantom, CNRM Chair, will lead a discussion of the integrated standard. Burchill stated that during today's meeting, RISC will again discuss the publication of the ANS standards in response to a new request to clarify this issue. Burchill said that he will report the results of today's discussion to the ANS/ASME NRMCC (Nuclear Risk Management Coordinating Committee). Additional items on the agenda include PRA standards training, PRA standards for new reactors, and other business.

3. Status of Standards Working Group (WG) Activities Reported by WG Chairs

A. ANS-58.21, Rev. 1 External Events (12 voting members present)

See Attachment B for slides presented during the discussion.

Bill Burchill stated that twenty RISC members submitted consensus votes on the revision to ANSI/ANS-58.21-2003. The ballot tally included four negatives. A second ballot was issued to require the draft to have a pilot trial use in order to complete the consensus process. Twenty RISC members submitted votes on this ballot. However, ANS Standards Board comments were very strong not to require a pilot trial use as part of the consensus process. The ANS Standards Board explained that trial use is normally done after a standard is issued, i.e., the consensus process is completed, and that the user community provides comments on the standard which are then incorporated in a future revision. Based in this input and recommendations from an ad hoc committee that he appointed to consider the trial use ballot,

Robert Bari, former RISC Chair, decided not to require trial use as part of the consensus process and not to release the draft until negative comments had been resolved as required by both ANS and ANSI.

Ravi Ravindra reviewed the issues raised by the four negative voters in the consensus ballot. Primary issues included whether the bases for supporting requirements were consistent with ASME PRA Standard ASME RA-S-2003, cost of complying with the standard, interpretation of requirements for updating seismic hazard results, and the need for pilot trial use study. Most other comments were found to be enhancing the clarity and usefulness of the standard. NRC comments on formatting are being resolved. Relatively few comments were not accepted.

Ravindra provided the committee a detailed presentation of the status of the revision to ANSI/ANS-58.21-2003. The presentation included an overview of the revision, resolution of comments, basic principles, supporting requirements, cost of complying, existing seismic hazard studies, pilot studies, peer review, and schedule.

BREAK (15 minutes)

ANS-58.21, Rev. 1 External Events Cont'd. (13 voting members present)

Burchill proposed a small subgroup to prepare recommendations in response to the issues raised by the negative ballots. Depending on the level of change required, a re-ballot may be necessary. The RISC members agreed with this approach. Burchill asked Allen Camp to head the subgroup with John Gaertner, Rick Hill, David Finnicum, and Gareth Parry to comprise the group. All agreed to accept this assignment.

Action Item 4/06-02 Allen Camp, John Gaertner, Rick Hill, David Finnicum, and Gareth Parry to form subgroup to provide suggestions on revising draft to satisfy negative balloters – Over next 30-60 days. Findings will be provided to RISC in a format similar to that used for the recommendations on ANS-58.22 considered at the 11/14/05 RISC meeting. (Camp head group.)

Camp requested that the RISC Committee be sent additional information from trial use of ANS-58.21 by the Columbia Generating Station and KRSKO.

Action Item 4/06-03: Bill Burchill email PSA '06 reports on the Columbia & KRSKO reviews to RISC through Pat Schroeder.

John Gaertner explained that his primary purpose in proposing a pilot trial use study is to determine whether the requirements of ANS- 58.21, Rev. 1 align with Capability Category 2. Gaertner said that he requested authorization for the pilot project by the EPRI Risk/Safety Management Underlying Committee in January 2006 but that funding had not been authorized. Gaertner explained that he is now looking for supplemental funding.

Burchill asked Gaertner to develop a statement of objectives, scope, schedule, and budget for this pilot study for the RISC Committee.

Action Item 4/06-04: John Gaertner to develop a statement of objectives, scope, schedule, and budget for this pilot study for the RISC Committee.

Stanley Levinson stated that ANS would get pressure from ASME for the ANS-58.21, Rev. 1 to be completed quickly so that progress on the integrated standard is not negatively impacted. Camp suggested the subgroup may be able to come up with a suggestion to find compromise and result in reversal of negatives to move forward with the revision within a number of weeks.

Burchill summarized the path forward noting that the schedule for completing the consensus process may be several months if a pilot trial use study needs to be completed within it.

B. ANS-58.22, Low Power/Shutdown (13 voting members present)

See Attachment C for slides presented during the discussion.

Ken Kiper reviewed the history of the ANS-58.22 Working Group, drafts, and consensus ballot tally (8 approved, 7 negative, and 1 abstain). Kiper said 298 comments were received from twelve reviewers (both voters and public). He estimated that 2/3rds of these comments had been resolved by the WG. He said that recommendations from a RISC LPSD ad hoc committee appointed by previous RISC Chair Bob Bari and approved at the 11/14/05 RISC meeting (see meeting minutes) were guiding current WG activities.

Kiper informed the committee he would be stepping down as ANS-58.22 Working Group Chair at the close of this meeting which ends his 3-year term. A new chair will take over the WG as soon as possible. Currently the schedule is indeterminate. Kiper hopes that a new chair will be able to motivate the group towards completion. He reported that current WG members want to remain on the group. Additional WG members will be added to address QLRA (Qualitative Risk Assessment) requirements.

David Finnicum reported the status of actions being taken in response to the RISC LPSD ad hoc committee recommendations that guidance documents are needed for implementation of ANS-58.22. The four guidance documents under consideration are:

1. Guidance on applying the standard to a time-averaged model, including defining "average," versus an outage-specific model;
2. Guidance on building a Configuration Risk Management (CRM) outage-specific model from the time-average model;
3. Guidance on how to treat the transition modes; and
4. Considerations for HRA under LPSD conditions.

Finnicum stated that the PWROG and the BWROG will each fund one guidance document; a determination is yet to be made on which documents will be developed by each. John Gaertner stated EPRI is writing a guidance document for QLRA and may be able to sponsor a guidance document on CRM model for outage-specific applications. Gaertner expected the guidance document for QLRA to be completed in June 2006. During discussion it was suggested that the PWROG undertake development of the guidelines for treatment of the transition modes because of previous work in this area.

Kiper read the 11/14/05 minutes of the RISC decision regarding qualitative risk assessment which stated the standard would proceed without qualitative analyses for the initial release; however, a mention would be made in the foreword of this future intention. Kiper expressed his feelings that there was not a need for a qualitative standard, but quantitative was required. Furthermore Kiper stated the standard for general applications should be as flexible as possible. Burchill stated a revised draft is expected to have substantive changes requiring a

second consensus ballot. Kiper speculated the WG will need only a couple months to complete comment resolutions.

Burchill asked for suggestions for infusing energy to the working group. The following individuals were suggested as potential working group members for the QLRA requirements: Dave McCoy, Jeff Mitman, Doug True, Duncan Brewer, John Gaertner, Tom Hook, Louis Chiu, and Leo Shanley.

Action Item 4/06-05: Pat Schroeder send email to RISC requesting recommendations of new members for LPSD working group – specifically a new subgroup to develop QLRA requirements and new WG Chair.

C. ANS-58.23, Fire (11 voting members present)

See Attachment D for slides presented during the discussion.

Dennis Henneke informed the Committee that the draft was sent out for consensus ballot Tuesday, April 4, 2006, and responses are due June 9, 2006. He commended the WG for their effort in getting the draft ready for ballot. The new draft incorporated two sets of comments from NRC and an external review group formed by the WG. The draft relies heavily on NUREG/CR-6850. Although no fire PRA currently complies fully with NUREG/CR-6850, it does provide the basis for a number of fire PRAs being developed in 2006. Henneke also remarked that no IPEEE fire PRA fully meets the Capability Category 1 requirements of the standard.

Greg Krueger noted that 41 nuclear power plant units have committed to apply NFPA 805 instead of 10CFR50, Appendix R, and that they all need ANS-58.23 as soon as possible in order to meet a 3-year deadline for this compliance.

Permission was given to Finnicum, Krueger, and Levinson to distribute the draft standard being balloted to the PWROG and BWROG for them to provide public comments.

Henneke explained that he hoped to start incorporating comments as soon as the ballot closes with a revision if necessary in September 2006. He also stated it may be possible to incorporate findings from the fire PRAs currently under development if they are available in time.

D. ANS-58.24, Level 2 (11 voting members present)

See Attachment E for slides presented during the discussion.

Bill Burchill reported for Mark Leonard who could not attend. Burchill named the current WG members and stated that ASME CNRM had agreed to nominate Ray Schneider and Duncan Brewer to participate on the WG. Mary Drouin informed the committee that the NRC would also nominate an NRC representative to the WG.

A PINS form was submitted for RISC approval in February. Negative votes are being reviewed and comment responses will be issued. Drouin acknowledged her negative would be satisfied if the scope stated a future intent to include full power.

Burchill reported that an issue had arisen relative to the lack of travel funding for WG members to attend WG meetings. Mary Drouin said that J. S. Hyslop is the NRC project manager for the

grant currently supporting RISC standards development and that he should be contacted to request a scope expansion to include the Level 2 and Level 3 standards development efforts.

Action Item 4/06-06: Bill Burchill to send email to NRC requesting financial and staff support for Level 2 and Level 3 PRA standards efforts.

E. ANS-58.25, Level 3 (11 voting members present)

Stanley Levinson reported for Keith Woodard who could not attend the meeting. Levinson reported a preliminary organization meeting was held in San Diego at the ANS Annual Meeting In June 2005. The official kick off meeting was held at the ANS Winter Meeting in November 2005, in Washington DC. Levinson named the current WG members. A PINS form was submitted and approved by RISC.

Mary Drouin informed the committee that an NRC person would be nominated for the group, and Dave Finnicum informed the committee that Westinghouse would also nominate a representative.

4. Nuclear Risk Management Coordinating Committee (NRMCC) Topics

A. Integrated Standards (10 voting members present)

See Attachment F for the handout used during the discussion.

Bill Burchill summarized the history of the joint ANS/ASME development of integrated PRA standards (integrated refers to both risk sources and reactor operating modes). Development of the concept began in 2004 with a recommendation from an ANS/ASME joint task group which included the chairs of RISC and CNRM. The agreement was that integrated Level 1 PRA standards would be developed by ASME and integrated Level 2 and 3 PRA standards would be developed by ANS. When published, the integrated standards would have joint logos, and revenue would be shared equally by the two societies. At previous RISC meetings, RISC has agreed that the consensus process on any individual PRA standard, e.g., external events, LPSD, and fire, should be completed before the respective standard is submitted into the integration process. The other option not chosen was to wait until each respective standard was published. A separate issue is whether to publish the standards once the consensus process has been completed.

Mary Drouin expressed a concern that decisions were made without going through a formal approval process (ballot), specifically the decision on whether the ANS standards would be published. Drouin stated that past RISC chair, Robert Bari, sent out an email requesting comments but it was her feeling that it was not apparent comments were considered in making the final decision.

Burchill explained that both RISC and CNRM working group members will be asked to participate in the integration process. Strict sentence-by-sentence accounting will be used to ensure traceability from current ANS standards to the integrated ANS/ASME standard. Burchill stated that Rick Grantom would provide a thorough description during tomorrow's joint RISC/CNRM meeting.

Drouin summarized the ground rules for integration. No new technical requirements are to be developed/deleted, but there may be a few exceptions in order to complete the integration. Requirements will not be re-numbered. Commentaries, notes, etc., are to be retained.

The committee discussed and expressed strong concern about how the integrated standards would be approved, i.e., how the consensus process would be conducted. The committee asked whether a final decision has been made on the approval process. Concerns were expressed that the original developers of a standard, i.e., the WGs, should be involved both in the integration process and in the long-term maintenance and update of any integrated standard based on the specific source standard. Burchill stated that no final procedural decisions had been made, and that at this time there are no draft procedures even being reviewed by both societies. Only verbal suggestions have been made.

B. Publication of ANS Standards (8 voting members present)

Bill Burchill reported that the decision by RISC to proceed with publishing the ANS PRA standards in parallel with the standards integration process was made in response to a request from the NRMCC 6/2/05 meeting. In response to this request Bob Bari, previous RISC Chair, polled the RISC by a 7/8/05 e-mail. All responses to the poll were positive to continue with ANS publication of the two standards; there were no negative responses. This decision was then communicated to the ANS Standards Board in a 7/18/05 memo, copies of which Burchill distributed to the meeting. Both the poll e-mail and the memo to the ANS Standards Board state the bases for the decision to complete publication which are:

- 1) There is a need for the individual standards in addition to the integrated standards.
- 2) The industry needs these standards as soon as possible. Waiting until the integrated standards are published would take too long.
- 3) Working from the published standards would simplify the integration process.
- 4) We need the expert vetting of the individual standards before they can be integrated into an overall standard.

The ANS Standards Board endorsed the RISC decision to proceed with publication. Burchill reported that due to Bari's absence from subsequent NRMCC meetings and the transition between Bari and himself at the beginning of 2006, this decision was not reported back to NRMCC in a timely manner. However, Burchill reported that he had clearly reported the decision to NRMCC during its 3/10/06 meeting.

Mary Drouin explained that at the time this decision was made, the NRC did not endorse the standards integration process, because the procedure being considered at the time was going to be very lengthy. The procedure has since changed, and hence, NRC currently supports the integration.

Burchill also passed out a copy of the four motions that he reported on Bob Bari's behalf at the 11/14/05 RISC meeting from the NRMCC 9/28/05 meeting. The second of these motions reiterates NRMCC's request to RISC to reconsider its decision to publish the individual ANS PRA standards.

Burchill asked for discussion on publication that he would report to the Standards Board at its meeting during the ANS Annual Meeting in Reno, NV, in June 2006.

Levinson questioned if ANS published the Fire and LPSD standard, would these standards be maintained and revised by ANS? Levinson feels there shouldn't be essentially two identical standards. One option is that the developing organization would withdraw their standard.

Drouin opened that the integrated standard is the way to go. She said that with the current definition of the integration process, it is achievable. She felt there was not sufficient discussion on this.

Burchill asked what interval of time is acceptable for completion of the integrated standard after consensus has been achieved. Henneke said that anything more than a couple months longer is unacceptable. With the integration process requiring re-balloting, a minimum of one year should be expected to get the integrated standard out. Burchill said that the uncertainty of the length of the integration process is a real concern.

Henneke expressed that it is very important to many of the individuals that work several hard years to get these standards published. They deserve recognition. He also said that whatever the additional time there would be for publication of the integrated standards is too much. Henneke stated he does not see the gain in developing the integrated standards.

Drouin informed the RISC that the CNRM requested (in their meeting being held simultaneous with the RISC meeting) that the discussion on the integrated standards be first on tomorrow's joint meeting agenda.

Henneke questioned the authority of NRMCC to require his participation on the integrated standards. Burchill explained that the two organizations approved a charter of the NRMCC.

Camp said that the consensus committees were informed of decisions concerning the development of integrated standards after the fact but not involved in the decision process. Drouin agreed with Camp that decisions were made without a lot of discussion of the committees. Burchill stated this will be discussed tomorrow. If either of the committees are strongly opposed to integration, a strong message should be sent to the NRMCC.

Drouin explained that publishing the ANS standards and the integrated standards requires the NRC to review duplicate standards creating a need for additional staff resources. This is why she feels we need to determine which is the best way and work toward it.

Bijan Najafi expressed his feelings that it is a risk to expect that the integrated standards can be approved in a timely manner.

C. Coordination with ASME on Level 1 Requirements (DELETED)

D. Other NRMCC Activities

See Attachment G for the letter distributed during the discussion.

Bill Burchill distributed a letter addressed to Richard Barrett from NRMCC Co-Chairs, Raymond Weidler and James Mallay, regarding standards development. The letter responded to misconceptions regarding the trial use. It also stated the intent of ANS and ASME to support the 2008 standards completion date sought by NRC. The letter referred to an action for Rick Grantom and Bill Burchill (CNRM and RISC Chairs) to give details on how to meet this date.

Burchill stated Ken Balkey, ASME Codes and Standards Chair, gave a report to the NRMCC on PRA standards for new reactors – Generation IV.

5. Other Business

Bill Burchill queried the committee on the next meeting. After a brief discussion, it was decided not to meet at the ANS Summer Meeting in Reno, but anticipated a meeting at the ANS Winter Meeting in Albuquerque, NM.

6. Adjourn

There being no further business for discussion, the meeting was adjourned at 5:53 pm.

Respectfully submitted

Patricia Schroeder, RISC Secretary