RISC Telecon Minutes
March 5, 2008 • 1:00 p.m. – 3:00 p.m. (EST)

Participating Members: Allen Camp (RISC Chair), *Sandia National Labs*; Robert Budnitz (RISC Vice Chair), *Lawrence Berkeley National Laboratory*; Paul Amico, *SAIC*; Robert Bari, *Brookhaven National Laboratory*; Richard Black, *US DOE*; Biff Bradley, *NEI*; Mary Drouin, *US NRC*; John Gaertner, *EPRI*; Rick Hill, *ERIN*; Gene Hughes, *ETRANCO*; Kenneth Kiper, *FPL*; Stanley Levinson, *AREVA NP*; Steve Nowlen (for Dennis Henneke), *Sandia National Labs*, Chris Rochon (for Dave Finnicum), *Westinghouse*; Jean Savy, *Risk Management Solutions*; Patricia Schroeder, *ANS*; Daniel (Bill) Stillwell, *South Texas Project Nuclear Operating Company*; Jonathon Young, *PNNL*

Participating Observers, Guests: Neil Brown, *Lawrence Livermore National Laboratory*; Doug Hance, *EPRI*; Rick Grantom (ASME CNRM Chair), *South Texas Project Nuclear Operating Company*;; Jeff Julius, *Scientech*; Greg Krueger, *Exelon*; Mark Leonard, *Dycoda, LLC*; Charles Moseley (NRMCC Co-Chair), *Individual* ; Maria Pohida, *US NRC*; Barry Sloane, *ERIN*; Doug True, *ERIN*; Donald Wakefield, *ABS Consulting*; Keith Woodard, *ABS Consulting*; Fatma Yilmaz, *Entergy*

1. Roll Call, review of agenda / Schroeder
Roll call was taken and the teleconference was begun at 1:05 p.m. EST.

2. Administrative items / Camp/Budnitz

Approval of November 2007 Meeting Minutes
The minutes of the November 14, 2007, meeting were approved unanimously as amended per suggestion of Ken Kiper to add "(with the exception of Ken Kiper)" to the following sentence in Sect. 7, Page 7, under LPSD Qualitative Presentation:

> The committee was in agreement "(with the exception of Ken Kiper)" that the qualitative portion needed to be in the Combined Standard and therefore must be written so that it was compatible.

Level 2/3 grant progress
Mary Drouin informed the committee that about a week ago she was informed that the grant from NRC was being processed. She was not sure how long it would take but would keep Camp informed.

Confirmation of NRC endorsement of individual standards
Drouin confirmed that the NRC had no intention on endorsing the individual standards. She felt that the issue was previously miscommunicated.

CNRM interactions and status of Combined Standard

Camp explained that the Combined Standard was basically finished and reported that ASME generated a document that addressed all ANS comment responses, which would be provided. Camp stated that he would be recommending that the Standards Board approve the Combined Standard once he had received input from the ANS Liaisons to CRNM plus the writing group chairs. He added that he received recommendations from the ANS liaisons to ASME (Budnitz and Levinson) to approve the Combined Standard and was waiting for responses from working group chairs.

3. Level 2 Status / Leonard

Writing group status

Mark Leonard reported that the working group had prepared a technical outline of the standard. Draft text, including proposed requirements in tabular form had been prepared and submitted for four of the nine major technical sections of the standard. Progress on the remaining sections had been hampered by increased workloads on cognizant authors. The group met twice last year in each case with a portion of working group. The group had been fluid but he was trying to recruit stable members. Two new members had been recruited. Major topics needed to be addressed. Leonard noted that he had challenges engaging three participants.

Leonard stated that he needed participation from a true industry station practitioner (not vendor) as he would be loosing Mike Barrett from Duke due to retirement at the end of the year.

Action Item 3/08-01: Members (guests welcomed too) to provide recommendations for industry station practioners (utility) preferably with company support for the Level 2 Working Group to Pat Schroeder for Mark Leonard.

Leonard added that it would also be beneficial for a working group member to be familiar with Level 2 that could couple up to Level 3.

It was noted that Ray Schneider was identified as the ASME Liaison to the Level 2 project. Mary Drouin reported that an NRC member was identified for the Level 2 Working Group. The announcement would be made through formal letter.

Leonard explained that the group had tentative plans to meet during the June 2008 ANS Meeting in Anaheim but that he did not anticipate full attendance. He felt that the September 2008 meeting at PSA-08 in Knoxville would have better participation. An initial draft by the end of the year was remotely possible.

Issues

Camp questioned whether the Level 2 Group anticipated any controversy from RISC that they were working through. Leonard stated that he did not feel that the group had gotten into enough detail to find controversy at this time.

Leonard noted that he was looking to the ASME Section 3 Structure Group for best practice of “containment structure fragility and structure analysis.”

Leonard confirmed that the draft was being written for Level 2 PSA at full power.

4. Level 3 Status / Woodard

Writing group status
Keith Woodard reported that the Level 3 Group had two very good meetings in 2007. NRC Member Jocelyn Mitchell had been very helpful explaining state of the art for Level 3. Woodard confirmed that the group had been plagued by similar issues regarding meeting participation as the Level 2 Group. He anticipated meeting during the ANS June 2008 Meeting in Anaheim for a full day but was unsure of the attendance. Woodard noted that the biggest problem was incorporating capability category framework into Level 3.

Woodard stated that assignments had been out for more than a year with about 50% completed. Although two members were changed to review status due to busy schedules, he felt that the group still had sufficient coverage.

Issues
Woodard stated that the working group had not identified any controversial issues at this time. He questioned whether the standard should be applicable to light water reactors or all radioactive releases but did not feel it impacted how it was written.

5. LPSD Update / Wakefield

Status of LPSD ballot
Allen Camp reminded the committee that an email summarizing the path forward for the LPSD Standard was distributed via email a few days ago. Camp confirmed that all comment responses were just completed. The qualitative group worked very hard in completing the qualitative portion, and it should be ready to be issued for ballot as part of the LPSD reballot.

Camp suggested that the ballot be set up so that a separate vote would be taken on each section as there could be more comments on the qualitative section. Should consensus be reached on the initial quantitative portion but significant comments on the new qualitative section, the initial part could be released while comments were being resolved on the qualitative section.

Members were divided on issuing the LPSD ballot with the qualitative and quantitative sections divided. Camp questioned Don Wakefield, the Working Group Chairman, as to what would be involved in integrating the qualitative section into the existing draft standard. While in general it was felt that the qualitative section was a stand-alone piece, the following would have to be completed to integrate the two pieces:

1). The qualitative section would have to be renumbered to be sequential.

2) An explanation about the qualitative section would have to be prepared for the foreword.

3) Qualitative definitions would need to be incorporated.

4) Conflicting definitions would have to be resolved.

The committee debated the intent of the previous motion to include the qualitative portion in the LPSD Standard if it did not significantly delay the standard as well as the merits of separating the vote on each part. Camp noted that the committee was in agreement that the qualitative and quantatitive portions of the LPSD Standard should be presented as one piece. It was further noted that if need be a decision could be made to move forward with releasing the initial quantitative section if substantive comments were received on the qualitative portion requiring significant time to resolve.

When Rick Grantom questioned how the Combined Standard would incorporate the qualitative section, it was suggested to fold it in just like the seismic margins section.

Ken Kiper suggested that an industry review group be formed to review the LPSD Standard concurrent with RISC ballot. The committee agreed with the suggestion resulting in a request from Allen Camp for a volunteer to coordinate a review team. Biff Bradley volunteered to identify members for and coordinate the review. Greg Krueger stated that Exelon would provide a representative for the industry review.

Action Item: 3/08-02: Biff Bradley to coordinate an industry review of the LPSD Standard with a list of reviewers and charter provided to Allen Camp through Pat Schroeder for RISC distribution.

Bradley questioned whether the quantitative section should be reviewed by the review group. Bob Budnitz suggested that the quantitative section be provided but that the review would technically be on the (new) qualitative section. No disagreement was voiced to Budnitz's suggestion.

Wakefield confirmed that he just received the final comment responses. He stated that the working group needed a last chance to review and confirm acceptance of the revised draft via a conference call. Wakefield stated that additional time would be needed to integrate the qualitative and quantatitive portions. Doug Hance offered to help with the integration. Camp asked Wakefield to let him know when he had an idea of when the integrated draft would be ready for ballot and to work with Pat Schroeder to expedite.

Action Item: 3/08-03: Don Wakefield and Doug Hance to work on integrating the qualitative portion into the quantatitive portion of the LPSD Standard.

Action Item 3/08-04: Don Wakefield to update Allen Camp once he has an estimate of when the LPSD draft would be ready for ballot.

Action Item: 3/08-05: Don Wakefield to work with Pat Schroeder to expedite the LPSD ballot.

Assignment of NRC representative

Mary Drouin confirmed that an NRC member had also been identified for the LPSD Working Group. The member was being finalized and a formal letter should be issued next week.

Update on qualitative part of the LPSD Standard (Doug Hance)

See Attachment A, Shutdown Qualitative Risk Assessment Presentation.

Doug Hance provided the committee a report. He noted that the LPSD qualitative draft, currently EPRI Technical Update 1016231, was provided to the public through internet download. Allen Camp questioned Hance whether he felt RISC would find any controversial issues in the draft. Hance did not feel that the draft contained anything controversial. He explained that Gareth Parry's email expressed concern that inclusion of the qualitative section of the LPSD Standard in the Combined Standard would enlarge the scope and potentially cause confusion. Hance explained that they limited the applicability and did not feel it would be a problem.

Amico motion

Allen Camp explained that Paul Amico's motion was put forward and seconded, but that he recommended that RISC delayed discussion on the motion until the next conference call as it was expected to be a lengthy discussion.

The following motion by Paul Amico was read so that all participants were informed:

MOTION: The ANS RISC Committee supports the concept that it is the role of the risk-informed standards development process to provide guidance on the

capability, quality, and use of any valid methods that can be used to support plant-specific risk-informed decision making and, further, that such approaches be fully integrated into the overall risk-informed application process. Therefore, the RISC Committee:

1) Re-affirms its previous decisions to include the seismic margins approach and the qualitative LPSD approach in the ANS external events and LPSD PRA standards (respectively) as alternative risk-informed approaches, and by extension to include them in the ASME/ANS integrated Level 1 standard;

2) Supports the update of section 1 of the integrated standard to include the role (including both applicable uses and limitations on use) that such approaches can play in the risk-informed application process and provide guidance on the use and selection of such approaches commensurate in detail with the same guidance provided for "full Level 1" PRA.

3) Recommends that the title of the joint ASME/ANS standard be changed to "Standard for Level 1 Risk-informed Analyses of LWR Nuclear Power Plants" or some such similar title that removes all ambiguity as to the scope.

4) Encourages the future inclusion in the standard of other such structured, risk-informed analytical approaches as they become developed, tested, and proven.

Amico explained that the point of the motion was to record RISC's opinion with respect to how the qualitative portion should be included in the Combined Standard. He noted that the motion used the terms "recommends/encourages" as it was not our (ANS') decision to make.

Camp noted that Part 1, 2, & 4 were related to ANS' decision to include qualitative portions in the Combined Standard while Part 3 regarding the title was editorial. While the motion would be fully discussed and voted on in the next RISC teleconference, members unable to participate would be provided an opportunity to vote electronically.

The committee expressed differing opinions on the qualitative portion of the LPSD Standard. Mary Drouin stated that the qualitative portion was not PRA in regulatory space while Jon Young felt that the qualitative was part & parcel PRA. Amico added that for a specific application, qualitative methods might be sufficient. Rick Grantom stated that ASME had not closed the possibility of anything and that qualitative methods could reside in a standard although potentially a different standard.

Drouin explained that as the NRC Rep. she felt obligated to provide the NRC position being that they would not endorse qualitative portions in the Combined Standard or anything else that was not strictly PRA in RG 1.200.

Gene Hughes stated that the NRC position was important but should not dominate the direction of the consensus committee.

Although a few members were ready to vote on the motion, most were not. A motion to table the vote on Paul Amico's motion as stated above was approved with one dissenting vote. For reference, a straw poll was taken showing strong opinions both ways.

Issues for next meeting
It was agreed that the next conference call would be conducted Friday, March 21, 2008, from 1:00 p.m. – 3:00 p.m. EST.

Action Item 11/08-06: Pat Schroeder to arrange 3/21/08 conference call and notify all committee members and call participants. Paul Amico's motion to be distributed to all for consideration.

It was suggested that RISC Members should check with their associated industry organizations regarding their position on the motion.

6. Priorities for new standards / Budnitz

Fire PRA during shutdown conditions
Bob Budnitz explained that an ad hoc committee was appointed to consider the development of a new standard on fire PRA during shutdown conditions. The committee included Bijan Najafi, Dennis Henneke, Steve Nowlen, Ken Kiper, and Bob Budnitz. The committee determined that they were not ready to write a standard on this subject as the "HOW" part was not available. Industry support to develop basis for such a standard was needed. Budnitz felt that without a standard on shutdown-fire, a hole remained within the existing standards.

Steve Nowlen informed the group that some research in this area was currently being done supported by the NRC, and EPRI was planning to participate in the review of the NRC research work. Rick Grantom agreed with the need but explained that he did not have the time to undertake this effort. Allen Camp summarized the discussion that we needed to look for support to get this moving forward.

Human Reliability Analysis
Paul Amico explained that Human Reliability Analysis (HRA) was changing rapidly. He thought that the initial ASME PRA Standard dealt with it as best it could at the time but that a more thorough job may be necessary particularly as HRA was used in Level 2 and 3.

Mary Drouin noted that she was involved in the writing of the ASME HRA section and explained that many people and a lot of heartache went into the development of that piece. She questioned what additionally was needed between the standard and good practice.

Jeff Julius mentioned that research in this area was going on. He noted that an NRC staff memo was issued forcing the industry to look at these methods asking for integration.

Bob Budnitz felt that the topic might be better aligned with ASME as they had a subcommittee on technology that could determine if the HRA part of the ASME Standard should be revisited. Drouin stated that she felt the requirements were of high level and did not need to be changed. It was agreed that further discussion of this issue would be tabled until another call.

New PRA standards under development
As representatives from ASME's Advance Reactor Group were on the call, Allen Camp asked for an update. Bob Budnitz noted that he was the representative to the ASME non-LWR PRA standard working group. He stated that the draft was completed and ready for working group review. Bill Stillwell, representative on the ASME new-LWR PRA standard working group, stated that they had a conference call the previous week and were revising the draft.

7. Issues/positions for NRMCC meeting / Camp
It was suggested to keep the NRMCC aware of future topics for upcoming RISC conference calls.

8. Next Telecon in mid to late March

Feedback from NRMCC meeting on March 14
Feedback from the upcoming NRMCC meeting would be provided by Allen Camp or Bob Budnitz since Camp may not be able to participate on the next RISC conference call.

Revision to Fire PRA Standard
A discussion of a revision to the Fire PRA Standard was deferred to another call. Allen Camp noted that the issue would be ASME's responsibility as the revision would be issued in Rev. 1 of the Combined Standard. Steve Nowlen explained that the ANS Fire PRA Writing Group wanted to make sure the team was involved in the update.

9. Adjourn
The call was adjourned at 3:05 p.m. EST.

Attachment A

EPRI | ELECTRIC POWER RESEARCH INSTITUTE

Shutdown Qualitative Risk Assessment Standard Update

ANS Risk Informed Standards Committee

March 5, 2008

Doug Hance, EPRI
Senior Project Manager
Risk / Safety Management

Shutdown Qualitative Risk Assessment (QLRA) Standard

- Background
  - The ANS Risk Informed Standards Committee (RISC) Committed to Address Qualitative Risk Assessment Methods in the LPSD PRA Standard.
  - In Support of RISC, EPRI Sponsored New Writer's Group Members who Developed the Proposed Qualitative Standard Section.

Shutdown Qualitative Risk Assessment (QLRA) Standard

- Status
  - EPRI Technical Update 1016231 Published December, 2007
  - ANS RISC Committee Schedule Met
  - Accessible for Public Download January 2008
  - Ready for Incorporation Into LPSD Standard

Shutdown Qualitative Risk Assessment (QLRA) Standard

Overview

Proposed Shutdown QLRA Standard Features:

- ASME PRA Standard format
- Capability Indices Used in Lieu of Capability Categories
- High Level Requirements (HLRs) and Supporting requirements (SRs) for:
  - End States, Plant Operational States, Safety Functions, Higher Risk Evolutions, Systems Analysis
- Peer review

Shutdown Qualitative Risk Assessment (QLRA) Standard

- Approach
  - Codify Industry Standard Practice and Improved Methods as Capability Index 1 and Capability Index 2.
  - Capability Index 3 Applies to Advanced Methods, Including Linkage of Qualitative End States to Quantitative Evaluations.
  - Peer Review Teams Have a Minimum of 2 Members for a 3 Day Review Period.

Shutdown Qualitative Risk Assessment (QLRA) Standard

- Applicability
  - The Standard is Applicable, at a Minimum, to Cold Shutdown and Refueling
  - The Standard Also Recognizes Hot Shutdown and Hot Standby in a Higher Capability Index.
  - Unlike the ASME PRA Standard, a Higher Capability Index Does not Correspond to a Higher Level of Risk-Informed Application

Shutdown Qualitative Risk Assessment (QLRA) Standard

Example – End States

	CAPABILITY INDEX I	CAPABILITY INDEX II	CAPABILITY INDEX III
ES-B1	For each POS, DEFINE the minimum set of equipment (i.e., success criteria) needed for a safety function to be supported.		
ES-B2	For each POS and safety function, DEFINE the type and number of SSCs needed for each end state result. *Comments*: This may be done using rules (e.g., N, N+1) and/or by specifying exact combinations of SSCs and/or POS. For example, in a BWR with the RPV level is high, fewer ECCS trains are required to be available to maintain adequate DID.		CORRELATE the POS and number of available SSCs with a risk value, in order to assign and end state result.

Shutdown Qualitative Risk Assessment (QLRA) Standard

Vision

- Guidance for Current Industry Practice
- Encourage Increased Consistency
- Identify Capability Index 2 and 3 to Recognize Improved and Best Practices
- Provide for Peer Reviews
- Recognize Linkage of Qualitative End States to Quantitative Evaluations (Capability Index 3 for Applicable Requirements)

Together…Shaping the Future of Electricity