



MINUTES

Risk-Informed and Performance-Based Principles and Policy Committee (RP3C) Marriott Wardman Park, Washington, D.C. October 30, 2017

Members Present:

N. Prasad Kadambi, RP3C Chair, Individual
*Edward Wallace, Vice-Chair, GNBC Associates, Inc.
John Fabian, (Secretary Pro Tem), American Nuclear Society
*Patricia Schroeder (Secretary), American Nuclear Society
Amir Afzali, Southern Company
*James August, Southern Company
Robert Budnitz, Lawrence Berkeley National Laboratory
Donald Eggett, Individual
George Flanagan, Oak Ridge National Laboratory
*Kathryn Hanson, Individual
David Hillyer, Energy Solutions
Alan Levin, U.S. Department of Energy
Stanley Levinson, Individual
*Mark Linn, Oak Ridge National Laboratory
Shivani Mehta, U.S. Nuclear Regulatory Commission
James O'Brien, U.S. Department of Energy
William Reckley, U.S. Nuclear Regulatory Commission
William Reuland, Individual
Andrew Smetana, Savannah River National Laboratory
*Robert Youngblood, Idaho National Laboratory

Guests:

Steven Arndt, U.S. Nuclear Regulatory Commission
*Steven Stamm, Individual
Andrew Prichard, Pacific Northwest National Laboratory

**participated by phone*

Members Absent:

Wayne Andrews Jr., Individual
Todd Anselmi, Enercon Services
Edward Blandford, University of New Mexico
Richard Browder, Duke Energy
Douglas Clark, Consolidated Nuclear Securities, LLC
Robert Eble, AREVA Inc.
Kamal El Sheikh, The Cameron Group, Inc.
Yan Gao, Westinghouse Electric Company, LLC.
Emily Gibson, Schnabel Engineering
Kathryn Hanson, Individual
David Holcomb, Oak Ridge National Laboratory
Quazi Hossain, Lawrence Livermore National Laboratory
Gerry Kindred, Tennessee Valley Authority
Thomas Marenchin, U.S. Nuclear Regulatory Commission
Ronald Markovich, Contingency Management Consulting

Carl Mazzola, Project Enhancement Corporation
Craig McMullin, Savannah River Nuclear Solutions
Kent Welter, NuScale Power

1. **Welcome, Roll Call & Introductions**

RP3C Chair Prasad Kadambi welcomed all to the meeting. Introductions were made.

2. **Approval of Meeting Agenda**

Prasad Kadambi directed members to the meeting presentation which was prepared and circulated to all members and will be projected on the screen. The presentation as well as attachments will be used as a guide throughout the meeting. Kadambi reviewed the agenda. The agenda was approved as presented.

3. **Status of Interaction with Standards Board**

A. Outcome of SB Meeting on June 13, 2017

Prasad Kadambi explained that with the RP3C meeting held before the Standards Board, the update of and direction from the Standards Board is often delayed. Donald Eggett let members know that the new Standards Board chair, Steven Arndt, will join the RP3C meeting a little late.

B. RP3C Actions on Standards Committee Strategic Plan Goals & Objectives

Kadambi directed members to the Standards Committee Strategic Plan, Attachment 1 of the meeting materials. He recognized several actions assigned to the RP3C to achieve the objectives and goals of the Strategic Plan. The RP3C has been directed to work with each consensus committee to develop a prioritized list and schedule for incorporating risk-informed and performance-based (RIPB) principles into its standards. The RP3C has also been tasked with preparing an article for *Nuclear News* to inform other members of the Society of the benefits of this RIPB effort. Additionally the RP3C needs to develop presentation materials that can be used to inform other industry groups as to the benefits and use of the ANS Standards Committee RIPB standards activities. Kadambi noted that some of the actions have been partially accomplished but dates will need to be revised. These actions are captured in the SMART Matrix that accompanies the Standards Committee Strategic Plan. The status of these activities will be reported at tomorrow's Standards Board meeting when progress on the SMART Matrix is discussed.

4. **U.S. Nuclear Regulatory Commission (NRC) Standards Forum and RP3C's Role** (Attachment 2 & 3)

Prasad Kadambi reviewed the latest directive from the U.S. NRC, Management Directive 6.5 which outlines the NRC's effort to participate and support standards activities. Kadambi then introduced Shivani Mehta, she is responsible for the NRC Standards Forum and coordination of activities with ANS. The last NRC Standards Forum was held on September 26, 2017. Mehta explained the "Collation of the Willing," essentially a callout to standards developers to champion development of standards on specific topics of benefit to the industry.

George Flanagan reported that he made a recommendation on behalf of ANS at the NRC Standards Forum for ANS to take the lead in organizing a standards workshop for industry to take a strategic look at the standards needed to support advanced reactors. The recommendation was well received. The initiative will be discussed at tomorrow's Standards Board meeting with a decision made on how to move forward. Flanagan added that he hoped work would begin in early 2018 following the judgement of the ANS Standards Board.

Kadambi reported that William Reckley offered the current staff perspective on RIPB at the Forum. While nearly 20 years old, the NRC has much guidance available as a resource.

5. Highlights of Update to RP3C's Operating Plan (Attachments 4)

A. New Dates for Tasks Identified Current Status of O'Brien-Kadambi Efforts

RP3C Operating Plan (O'Brien, Kadambi)

Prasad Kadambi directed members to the draft RP3C Operating Plan provided in the meeting materials as Attachment 4. This operating plan describes the RP3C goals and activities/processes that RP3C will perform/utilize to meet its responsibilities consistent with the RP3C bylaws. James O'Brien explained the process of preparing the draft plan. First they had to figure out what was needed. Ed Wallace, Alan Levin, and James August reviewed the list of ANS standards and projects to determine which would benefit from incorporating RIPB insights. That list will be discussed later in the meeting and is still a work in progress. Out of that review, two projects have been selected as pilots, ANS-30.2 and ANS-3.14. James O'Brien felt that the operating plan needs to be piloted with these two standards before finalizing. He said that once these two standards use the operating plan and give feedback, then RP3C can have a finalized plan that all ANS standards can use for RIPB guidance. He expects that a draft operating plan will be available for review by the June 2018 meeting.

Indoctrination of Standards Working Groups in RIPB (Wallace, Youngblood, Stamm)

Kadambi explained the details of this action. He stated that the RP3C needs to setup a webinar to brief working groups on the RIPB guide, outline advantages of inclusion of RIPB concepts in standards, and how the RP3C will operate to support working groups in developing more RIPB standards. This includes the following:

- Draft of training package provided to Standard Board
- Trial run of training provided to RP3C and Standard Board
- Amended presentation based on RP3C and Standards Board feedback
- Begin webinar presentations to consensus committees and working groups

The direction and steps for this project is based on the Standards Committee Strategic Plan and accompanying SMART Matrix as Goal #1, D. The RP3C Guidance Document in development will be part of the training package. Robert Youngblood and Steven Stamm offered to support Ed Wallace in this activity. The due date for complete of these materials for review by the Standards Board is December of 2017. An extension will be requested at the Standards Board meeting for the middle of 2018.

B. Changes to RP3C Pilots Previously Identified

Mark Linn questioned whether ANSI/ANS-58.14-2011 (R2017), "Safety and Pressure Integrity Classification Criteria for Light Water Reactors," would be used as pilot as discussed at the June 12, 2017, meeting. Prasad Kadambi explained that subsequent discussions changed the direction of the pilots. A decision was made to forgo use of ANSI/ANS-58.14-2011 (R2017).

Work on the pilots is ongoing. The following two standards are being used for the pilots:

- 1) ANS-30.2, "Categorization and Classification of Structures, Systems, and Components for New Nuclear Power Plants"
Amir Afzali was not able to commit to a completion date of the draft at this time. White papers in development by NEI need concurrence of NRC before work on the ANS-30.2 can be initiated. Depending on the work by NEI will determine whether or not ANS-30.2 will be initiated.
- 2) ANS-3.14, "Process for Aging Management and Life Extension for Nonreactor Nuclear Facilities"
James O'Brien reported that the draft is making progress and is expected to be completed soon.

This activity is also being directed by the Standards Board through Standards Board Action Item 6/2017-16.

6. Highlights of Categorization of ANS Standards (Attachment 5)

Alan Levin reported that a preliminary scoping study has been completed. The output was a list of ANS standards with a recommendation for incorporating RIPB insights. Ed Wallace clarified that the list is not inclusive of all ANS standards that may benefit from incorporation of RIPB insights but the ones that the ad hoc group concurred on and a sampling that would be a good start. Stanley Levinson suggested that ad hoc group members share their determining factors as this might create a guide to standardize the decision process. When asked, Wallace explained that the list of standards from the prioritization survey was not given additional consideration. George Flanagan suggested that the list of standards recommended for incorporation of RIPB methods should be narrowed to those that the consensus committees are developing and maintaining.

No objections were voiced by members to the proposed list. A recommendation was made to present a proposed path forward to the Standards Board. It would be up to each consensus committees to establish a priority list. George Flanagan felt that incorporating RIPB in active projects and current standards should be the first priority. The list will be presented to the Standards Board for concurrence at their meeting tomorrow. The next step would be to work with the responsible consensus committees. If not the consensus committee chair, each consensus committee will need a point of contact. The point of contact should provide feedback to RP3C so that the categorization can be updated accordingly.

The categorization spreadsheet will be provided to the Standards Board in completion of Standards Board Action Item 6/2017-16. It is expected that the Standards Board will concur with the recommended list and subsequently assign an action item for the RP3C to work with consensus committees to develop a priority list to incorporate RIPB in the identified standards.

Action Item 10/2017-01: Prasad Kadambi to present the RP3C Categorization of ANS Standards to the Standards Board for their endorsement with the following proposed actions:

- 1) for each consensus committee to review, evaluate, and set a priority list
- 2) for each consensus committee chair, or chair appointee, to serve as a point of contact to the RP3C
- 3) for each consensus committee's point of contact to provide committee feedback to RP3C
- 4) for RP3C to update the categorization list with committee feedback

7. Current Status of Procedural Guidance Development (Attachment 6)

James O'Brien provided members a status update of the guidance document in development under the RP3C. A partial first draft has been completed. O'Brien explained the thought process in drafting the guidance and summarized the draft guidance document. Members discussed the decision making process on applying performance-based, risk-informed or performance-based/risk-informed approaches in standards. Philosophies used in other standards and regulatory documents were also discussed. All of these methods can be used to achieve the intended outcome. The success of NFPA-805 and the Risk-Informed ISI standard from ASME were debated by the committee. Stanley Levinson added the NRC's Maintenance Rule, 10 CFR 50.65 as another example of implementing RIPB concepts. It was noted that all three documents should be reviewed by James O'Brien in order to help complete the Operating Plan. Stanley Levinson added that the SubCommittee on Risk Application (SCoRA) under the Joint Committee on Nuclear Risk Management was also trying to prepare guidance but has found that codifying the methodology is very difficult. Kadambi confirmed that he has been in contact with SCoRA Chair Gerry Kindred, also an RP3C member, and that they are collaborating on this effort. O'Brien stated that he'd need about another month to refine the guidance.

Kadambi concluded that the draft guidance document is acceptable as no objections were voiced. He added that once the draft document is complete, RP3C needs to work on implementing the concepts with the development of ANS-30.2 which is chaired by Amir Afzali.

The status of the draft guidance will be reported to the Standards Board as partial completion of the action directed by the Standards Board to develop a training packet outlined in the Standards Committee Strategic Plan SMART Matrix, Goal #1 D.

8. Review Status of Pilots and RARCC's Standards Projects

Reports from working groups are as follows:

ANS-54.1, "Nuclear Safety Criteria and Design Process for Liquid-Sodium-Cooled-Reactor for Nuclear Power Plants"

The draft will be issued to the consensus committee for approval in the next few weeks.

ANS-30.2, "Categorization and Classification of Structures, Systems, and Components for New Nuclear Power Plants"

Initiation of the standard is pending the completion of the modernization effort white papers by NEI and subsequent NRC approval.

ANS-3.14, "Process for Aging Management and Life Extension for Nonreactor Nuclear Facilities"

The draft is making progress and is expected to be completed soon.

9. Licensing Modernization Project Papers, Status and Schedule

The status of the modernization project was discussed under the ANS-30.2 Working Group report, see Agenda Item #8.

10. RP3C Report to SB

Kadambi stated that he would report on the progress and expected completion dates for the projects discussed earlier today including the RP3C Operating Plan and RP3C pilot activities.

11. Review of Open Action Items

The Open Action Item Report was reviewed. The status of each action item can be found in the report following the minutes.

12. Other Business

Steven Arndt, the new Standards Board chair, addressed RP3C members. He reported that all ANS committees are being asked to determine how to be more effective, how to work with the industry to be more supportive, and how to be the "Can Do" society. The real challenge is to get at the root of the issues. We have great opportunities. Arndt sees a lot of movement in the industry, and we need to get ahead of the curve to meet the schedule. Additionally, he sees Part 50.69 to be an important issue for advanced reactors as well as the risk-informed technical specifications area. ANS needs to be proactive in order to serve our community.

13. Next Meeting

The RP3C plans to hold a meeting on Monday at the next two ANS national meetings. The next two ANS national meetings are as follows:

- ANS Annual Meeting, June 17-21, 2018, Philadelphia, PA
- ANS Winter Meeting, November 11-15, 2018, Orlando, FL

14. Adjournment

The meeting was adjourned.