American Nuclear Society

MINUTES

Standards Board Teleconference

June 9, 2020

Members Present:
Steven Arndt (Chair), U.S. Nuclear Regulatory Commission
Donald Eggett (Vice Chair), Eggett Consulting LLC
Patricia Schroeder (Secretary), American Nuclear Society
Robert Bari, Brookhaven National Laboratory
Robert Budnitz, Lawrence Berkeley National Laboratory (retired)
George Flanagan, Individual
Dennis Henneke (Observer), GE Hitachi
N. Prasad Kadambi (Observer), Kadambi Engineering Consultants
Mark Linn, Oak Ridge National Laboratory
Kathryn Murdoch, American Nuclear Society
John Nakoski, U.S. Nuclear Regulatory Commission
James O'Brien, U.S. Department of Energy
Andrew Smetana, Savannah River National Laboratory
Andrew Sowder, Electric Power Research Institute
Donald Spellman (Liaison), Xcel Engineering
Steven Stamm, Individual
William Turkowski, Westinghouse Electric Company, LLC
Larry Wetzel, BWX Technologies, Inc.

Members Absent:
Amir Afzali, Southern Company
Carl Mazzola, Project Enhancement Corporation
David Hillyer, Energy Solutions

Others Present
Michelle French (Observer), WECTEC
Robert Roche-Rivera (Observer), U.S. Nuclear Regulatory Commission
Ed Wallace (Observer), GNBC Associates

1. Welcome and Roll Call
Standards Board Chair Steven Arndt called the meeting to order. Roll call was taken, and a quorum was established.

2. Approval of Agenda
The agenda was approved as presented with the flexibility to move discussion items as needed to accommodate schedules.

3. SB Chair Report

A. Report to the Board of Directors
Steven Arndt updated members on several activities. Details of these activities can be found in his informative report to the ANS Board of Directors (BOD) provided as Attachment 1.

B. Report from ANS President's Special Session
Arndt reported on the ANS President's Special Session held by teleconference the previous week. Last November, the BOD passed the 2020 ANS Change Plan—a 200-page document with more than 20 objectives and many moving parts. Craig Piercy was hired last November as the new ANS Executive Director and Chief Executive Officer. The professional staff at ANS headquarters was reorganized with a few reductions. A member service center was created. Improvements are being made to ANS's IT infrastructure to make ANS more effective. ANS applied for and received a small business stimulus loan. Some additional costs were incurred by pulling out of the physical meeting in Phoenix, but ANS is doing well with the loan and strong registration numbers for the virtual meeting. More have registered for the virtual meeting that any physical meeting in the recent past. There's been movement on division interface with headquarters that has been met reasonably supportive, but the local section issues still need to be resolved. Initially the Change Plan was looking to reduce standing committees and considered moving the Standards Board to a subordinate group. In the end, the Standards Board structure and role remained unchanged as did many other ANS standing committees.

The proposed volunteer standards database was discussed. It was recognized that the request to develop this tool goes back almost 15 years. Pat Schroeder reminded members that an action item (11/2019-06) was assigned to elevate the need for the volunteer database to the BOD through the ANS President. It is believed that the migration of the ANS Standards Workspace into ANS Collaborate will provide some searching capabilities with enhancement from ANS's IT Department. With staff reductions, the department now includes only Johnny Cison as the Director of Digital Technology. Other IT services are now outsourced. Cison takes direction from the BOD. Currently, he has been tasked with upgrading ANS's IT infrastructure and the Association Management System (netForum), creating a platform for virtual meetings, completing the redesign of the ANS webpage, as well as on-going maintenance as webmaster. A BOD request to Cison to prioritize work on the volunteer database should help.

C. Advanced Reactor Standards Path Forward

- Issuance of ANS Special Committee's Report, "Setting the Right Bar: How Consensus Standards Help Advanced Reactor Development"
  The report by the ANS Special Committee on Advanced Reactor Policy (SCARP), "Setting the Right Bar: How Consensus Standards Help Advanced Reactor Development," was issued at the close of the ANS Winter Meeting on November 21, 2019. Authors of the report included Standards Board members Steven Arndt, Robert Budnitz, and George Flanagan. The report addresses support to expedite standards. It is not known if the SCARP will go forward after this meeting. Some of the policy aspects will be transferred to the ANS External Affairs Committee, a new standing committee reporting to the BOD.

- Presentation to Institute of Electrical and Electronics Engineers (IEEE) Nuclear Power Engineering Committee (NPEC)

Arndt made a presentation to the IEEE NPEC on the SCARP report at their January 29, 2020, meeting. The report was well received.

- Issuance of Guideline NEI 19-03, "Advanced Reactor Codes and Standards Needs Assessment"
  The Nuclear Energy Institute (NEI) 19-03 "Advanced Reactor Codes and Standards Needs Assessment," was issued in parallel with the SCARP report on December 30, 2019. This report builds on the ANS/U.S. Nuclear Regulatory Commission (NRC) workshop to develop a priority set of standards. Arndt believes that the NEI report is close enough to the feedback from the 2018 ANS/NRC Workshop that an assessment of NEI 19-03 is not needed by ANS.

- NEI/ANS Advanced Reactor Standards Needs Virtual Workshop
  Since the issuance of the ANS and NEI reports, there has been an understanding that these reports are not sufficient to move the effort forward. ANS and NEI are collaborating to put together a workshop to focus on how to move forward and what resources are needed. The virtual NEI/ANS Advanced Reactor Codes and Standards Workshop is scheduled for June 23, 2020, with players from standards development organizations (SDOs) with advanced reactor standards, developers, and more importantly includes U.S. Department of Energy (DOE) and NRC representatives. The workshop's objective is to move forward the effort on advanced reactor standards by securing resources for standards work and to develop a better list of what the industry needs on advanced reactor standards development.

  George Flanagan explained the challenge to get the right people to work on advanced reactor standards. First, the standards in development under the Research and Advanced Reactor Consensus Committee (RARCC) need to be issued before the next level of standards are initiated. Flanagan will work with Pat Schroeder to solicit volunteers when the next level of advanced reactor standards is ready to be initiated. Dennis Henneke expressed concern with NEI 19-03 as he believes the report has mismatched priorities. ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Nuclear Safety Designs," was given as an example that does not match the License Modernization Project (LMP). Andrew Sowder added that he has heard from a few developers that they do not want standards, that they feel it's too early.

ACTION ITEM 6/2020-01: George Flanagan to work with Pat Schroeder for a promotion to solicit volunteers for advanced reactor standards when ready. DUE DATE: January 1, 2021

- NRC Standards Forum to focus on Advanced Reactors
  The NRC will be holding a standards forum tentatively scheduled for September 15, 2020. The forum will be focused mostly on advanced reactors; however, the objective is not to rehash the same things but to make forward progress.

D. Standards Board Membership

- New Standards Board Chair
  Steven Arndt's term as Standards Board Chair ends after the close of the annual meeting this Thursday. He has been elected to the ANS Board of Directors and plans to run for ANS President -Elect the next cycle. Incoming ANS President Mary Lou Dunzik-Gougar appointed Donald Eggett as the next Standards Board Chair. Arndt thanked Eggett for his willingness to take the reins.

- Appreciation to members with terms ending
  Arndt recognized Amir Afzali, Mark Linn, and John Nakoski for serving their three-year term. All three members were reappointed.

- Recognition of new members

  - At-large (appointed by ANS President)
    In addition to the re-appointments, Donald Spellman was appointed to the Standards Board.

  - Ex officio (new Consensus Committee Chairs)
    Arndt announced that Jean-Francois Lucchini was elected as the new Fuel, Waste, and Decommissioning Consensus Committee (FWDCC) Chair. Lucchini moved up from vice chair to succeed David Hillyer as chair. Maryanne Stasko was elected as FWDCC Vice Chair. Both positions were confirmed by the Standards Board and will be effective June 16, 2020. David Hillyer was thanked for his leadership the last three years. Arndt recognized that Gene Carpenter retired and stepped down from his role as Large Light Water Reactor Consensus Committee (LLWRCC) Chair. Michelle French has been appointed LLWRCC acting chair and agreed to take on the chair role if elected. The LLWRCC will hold an election ballot at the end of this month.

    Pat Schroeder was requested to include resumes of new candidates with future election ballots.

ACTION ITEM 6/2020-02: Pat Schroeder to make sure that future election ballots of new members include resumes. DUE DATE: On-going

E. Chair General Comments
Arndt expressed appreciation for the opportunity to work with the Standards Board. He considers the Standards Board the largest and most participatory ANS committee and feels it should receive more recognition. An enormous amount of volunteer work is done within the Standards Committee. Arndt will continue to support the standards program in the upcoming NEI/ANS workshop and will then turn the responsibilities over to Eggett.

4. SB Vice Chair Report
Donald Eggett provided a written report (See Attachment 2). He reminded all of an action item assigned to him and others to determine how ANS should address advanced reactor standards. The action item was assigned to this ad hoc task force but was put on hold until the SCARP report was issued. The NEI/ANS workshop scheduled on June 23, 2020 supports this action item. Eggett added that he believes there is a lot of work to do on advanced reactors. The workshop is just a start to help prioritize advanced reactor standards. Feedback from the workshop will need to be evaluated.

A. Results of Appeal on ANS-54.1-202x, “Nuclear Safety Criteria and Design Process for Sodium Fast Reactor Nuclear Power Plants”
Eggett recognized that the appeal on ANS-54.1-202x took longer than he’d have liked due to several issues including health issues. The appeals committee agreed with two of the three comments from the appealer. As a result, a couple of changes were made to the standard. The appealer was notified of the decision by letter on January 24, 2020. Unfortunately, the objection was maintained based on the one unresolved comment. ANSI approval was received on March 23, 2020. Publication is expected the end of June.

B. Standards Service Award Selection Committee Report

- Announcement of selection committee’s recommendation(s)
  Eggett stated that he and those on the selection committee look forward to reviewing Standards Service Award nominations every year. This year’s selection committee included Robert Budnitz,

Steven Stamm, and Larry Wetzel with Eggett as chair. Eggett is happy to say that they recommended two worthy candidates—George Flanagan and Prasad Kadambi. Eggett read their citations and personally thank both for their service. Budnitz added that the selection committee considered several other worthy candidates.

- Standards Board approval
  The approval of Flanagan and Kadambi as the 2020 Standards Service Award recipients was conducted by e-ballot prior to the meeting. Both Flanagan and Kadambi were in attendance and notified of their selection.

- Appointment of 2021 selection committee
  Offers from Robert Budnitz, John Nakoski, William Turkowski, and Larry Wetzel to serve on the 2021 Standards Service Award Selection Committee were accepted. Policy dictates that the Standards Board Vice Chair serves as chair for the selection committee.

C. New Standards Board Vice Chair
Eggett announced that Carl Mazzola was appointed and accepted the Standards Board Vice Chair role.

ACTION ITEM 6/2020-03: Carl Mazzola to chair the 2021 Standards Service Selection Committee with support of Robert Budnitz, John Nakoski, William Turkowski, and Larry Wetzel. DUE DATE: May 1, 2021

D. Vice Chair General Comments
Eggett believes that it is important for members to be familiar with the Change Plan and asked Pat Schroeder to distribute. He added that he feels it is very important to have NEI representation on the Standards Board and hopes that the jointly hosted workshop will have a positive effect on this role.

ACTION ITEM 6/2020-04: Pat Schroeder to distribute the current ANS Change Plan to members. DUE DATE: June 15, 2020.

5. Secretary Report
Pat Schroeder summarized her secretary and sales report provided with the meeting materials (Attachment 3). Included in the report was an update on the Standards Volunteer Database, third-party royalties, the new webpage created to recognize young professionals in ANS standards, the Associate Member Report, and updates on staff activities.

6. Standards Committee Strategic Plan Report/SMART Matrix Progress on Goals & Objectives--SMART Matrix
Members were directed to the SMART Matrix (Attachment 4) by Steven Stamm. Review of actions assigned to the External Task Group Chair were skipped since the position was open. Prasad Kadambi asked that actions assigned to the Risk-informed, Performance-based Principles and Policy Committee (RP3C) be addressed after he reports progress under his RP3C report. He feels some actions will need modification and would like to make a proposal for the Standards Board to consideration after his RP3C report.

Stamm reviewed the Consensus Committee Performance Evaluation Report (Attachment 5). Overall meeting participation is good, but ballot participation could be better. For the Large Light Water Reactor Consensus Committee (LLWRCC), Stamm personally called individuals with poor

participation on behalf of the chair. A challenge in getting working groups to resolve comments within the recommended timeframe was recognized. Budnitz explained that the Joint Committee on Nuclear Risk Management (JCNRM) is not shown on the evaluation report because the American Society of Mechanical Engineers (ASME) is the committee's secretary and responsible for record keeping. If shown, he feels that the committee would compare very well with the exception of resolution of comments due to the number of comments typically received in the thousands for each standard. Budnitz would like to see JCNRM included and will work to provide the information for the next evaluation.

ACTION ITEM 6/2020-05: Pat Schroeder to add JCNRM to the 2020 Consensus Committee Evaluation Report with information from Robert Budnitz.
DUE DATE: January 31, 2021

7. Current Issues

A. Policy-related comments on ANS-30.1 "Integrating Risk and Performance Objectives into New Reactor Safety Designs" (Attachment 6)
Mark Linn provided a summary of the Research and Advanced Reactor Standards Consensus Committee (RARCC) preliminary ballot of ANS-30.1 held in April of this year. In addition to comments from RARCC members, the working group received verbal comments from the JCNRM during a call. Feedback was varied from positive to negative with strong negative comments coming from within the working group. Several of the comments were discussed including a concern with consistency between ANS-30.1 and NEI 18-04, "Risk-Informed Performance-Based Technology Guidance for Non-Light Water Reactors." Being that ANS-30.1 is written to be technology neutral, Linn disagreed there was a conflict. The options of issuing ANS-30.1 as a guidance document or trial-use standard were discussed but some felt that neither of these platforms would be appropriate if the document includes requirements. Linn expressed concern that without some compromise position, certain negative comments would be unresolvable. Ed Wallace had reviewed ANS-30.1 as part of RP3C and was involved in the License Modernization Project (LMP). He offered to help Linn with the comments related to the LMP. Prasad Kadambi added that the RP3C was in favor of the standard proceeding expeditiously. The sentiment of the Standards Board was that the comments be resolved to the extent possible and preparation of the standard be continued.

ACTION ITEM 6/2020-06: Ed Wallace to help Mark Linn respond to comments related to NEI18-04 from the RARCC preliminary ballot of ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Safety Designs."
DUE DATE: September 1, 2020

B. Concern with Revised Appeals Procedure in Accredited Rules and Procedures (Attachments 7 & 8) (Access Ballot HERE)
Steven Stamm explained his objection to the revised appeals procedure. He explained that we need to be very careful with what is included in the rules and procedures as it is accredited by ANSI. The accredited procedures are essentially a contract with the American National Standards Institute (ANSI) for developing American National Standards. In the past, we have limited the procedures to the highest level that complies with ANSI with more detail in a subordinate document. Noncompliance with subordinate procedures is between the Standards Board and the consensus committees. The proposed change to the appeals procedure were wording changes that do not change the process, but the balance of the changes adds deadlines subject to ANSI audit. Specific time requirements are asking for trouble in his mind. They are a great idea, but if not met, we can be cited in an audit. Stamm suggested that additional guidance should be added to a policy instead of the accredited rules and

procedures. Members agreed that the intent of the revised appeals procedure should be retained with the additional guidance to be incorporated into a policy. Pat Schroeder offered to draft a policy on appeals. Once completed, she'll send the draft to Stamm, Robert Budnitz, George Flanagan and Carl Mazzola to review.

ACTION ITEM 6/2020-07: Pat Schroeder to draft an appeals policy and send to Steven Stamm, Robert Budnitz, George Flanagan and Carl Mazzola to review.
DUE DATE: August 1, 2020

C. Consensus Committee Interface Reviews (Attachment 9)
(Overview of the recent change to CC Procedure Manual Sec. 5.2)
Stamm revisited the change to Sec. 5.2 of the Consensus Committee Procedures Manual just to make sure that all members are familiar with it as it will affect the approval schedule of draft standards. He explained that the change provides Non-Developing Consensus Committees (NDCC) an opportunity to review draft standards from other committees in parallel to subcommittee review. The revised procedure also provides guidance on the purpose of the NDCC review and advises that the NDCC Chair will review comments, combine and edit, as appropriate before submittal to the working group.

D. Other Current Issues
No other issues were addressed.

8. Professional Division (PD)/Standards Committee (SC) Liaisons Program (Attachment 10)

A. PD/SC Liaisons Program Status Update
Turkowski reported that prior to each ANS national meeting, he sends out the PD liaison list. He sent the most recent one out in May and requested updates to the liaison list. Turkowski has also sent out the PD liaison presentation with information about the program. Pat Schroeder reported that she has created a site on ANS Collaborate for each consensus committee's PD liaisons. The sites provide liaisons access to committee minutes and Project Initiation Notification System (PINS) forms. Meeting notices are sent to liaisons through Collaborate as well.

B. CC/PD Interface Activity (all interface including current meeting)
Participation of PD liaisons has been slow. Consensus committee chairs were encouraged to personally reach out to the divisions twice a year to encourage engagement. Donald Eggett asked Steven Arndt to support this program as a member of the BOD, and he'll do the same as the Standards Board Chair.

9. Review of Open Action Item Report

A. Report on Open Action Items
Open action items were reviewed. A complete status report of open action items is provided at the end of these minutes. The following new action items were assigned during the discussion:

ACTION ITEM 6/2020-08: James O'Brien and Prasad Kadambi to make a brief presentation on risk-informed, performance-based methods to the ANS-19 Subcommittee on Reactor Physics at their next meeting during the ANS Winter Meeting.
DUE DATE: November 16, 2020

ACTION ITEM 6/2020-09: Pat Schroeder to include a discussion on the LLWRCC agenda for the July teleconference to discuss the path forward for ANS-3.8.7, "Properties of Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness at Nuclear Facilities."
DUE DATE: July 29, 2020

ACTION ITEM 6/2020-10: Pat Schroeder to provide Michelle French the history of ANS-3.8.7, "Properties of Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness at Nuclear Facilities," and letter from NEI with their position on draft standard ANS-3.8.7.
DUE DATE: June 15, 2020

ACTION ITEM 6/2020-11: Prasad Kadambi to provide his white paper on the LMP to Amir Afzali and George Flanagan to determine if it can be used as guidance on how and where NEI 18-04, "Risk-Informed Performance-Based Technology Guidance for Non-Light Water Reactors," should be used in ANS standards (Related to Action Item 11/2019-18).
DUE DATE: September 1, 2020

B. Concurrence to Close Report of Completed Action Items
Members were asked to take a few minutes to review the report of completed action items (see Attachment 11). The following motion was then made:

MOTION:
To close the list of completed action items.

The motion was unanimously approved.

10. RP3C Report

Prasad Kadambi reported on RP3C activities and discussions held during the RP3C meeting the previous day. A report and several attachments were provided to Standards Board members prior to the meeting (See Attachments 12 with Attachments A-D). RP3C has reviewed several ANS standards in development that have incorporated RIPB methods and offered input. Much progress has been made with ANS-30.3, "Light-Water Reactor Risk-Informed Performance-Based Design," and he feels this might help ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Safety Designs." RP3C held a discussion on proposed new standard ANS-3.15, "Risk-Informing Critical Digital Assets (CDAs) for Nuclear Power Plant Systems," and JCNRM's proposed guidance document "Guidance Document for Risk Informing Physical Security and Cyber Security Programs at Nuclear Facilities." Robert Youngblood has been assigned as the RP3C contact for both projects.

Kadambi stated that the concept of the SMART Matrix is good, but RP3C would like to propose a revision that he feels will be more useful. He proposed reducing activities from six to four. Part 1 of the training on the guidance document has been issued. Part 2 on the LMP should be issued soon. The proposal includes the use of the Schedule of ANS Standards in Development using RIPB Properties to be part of the metrics so that it can be better utilized. The four proposed actions are as follows:

Goal #1 (D)

1) Incorporate risk-informed and performance-based methods in ANS standards, where appropriate, by:
1. Developing appropriate guidance

2. Socialize guidance that is developed
3. Modify and maintain-as-current guidance based on feedback from Working Groups

2) Deliver training on RP3C developed internal guidance for RIPB methods to Consensus Committee and Working Group members

3) Prepare and Pilot training material relevant to RIPB methods from external sources

4) Update and follow-through on "Schedule of ANS Standards in Development using RIPB Properties"

Steven Stamm noted that the article published in Nuclear News was historical and did not include what ANS is doing to incorporate RIPB methods in ANS standards. That was the purpose of this action on the SMART Matrix, and he would like to see this action on the matrix maintained. Stamm will review the proposal and work with Kadambi on specificity to update the SMART Matrix.

ACTION ITEM 6/2020-12: Steven Stamm to work with Prasad Kadambi on updating RP3C actions on the SMART Matrix with the proposed changes to include specificity. DUE DATE: September 15, 2020

Donald Spellman suggested that he also work with Stamm on updating the SMART Matrix as the new External Communications Task Group Chair.

ACTION ITEM 6/2020-13: Donald Spellman to work with Steven Stamm to update the actions for the External Communications Task Group Chair. DUE DATE: September 15, 2020

ACTION ITEM 6/2020-14: Steven Stamm to send the revised SMART Matrix to the Standards Board for review and comment. DUE DATE: September 15, 2020

A. Guidance Document Subsequent Actions
Comments received on the trial-use version of the RP3C guidance document have been incorporated, and Part 1 training on the guidance document has been initiated. Training presentations have included about 50 attendees. The revised guidance document (Attachment 12D) and a Q&A sheet (Attachment 12B) were provided. James O'Brien stated that it's a good start for a long journey. Kadambi welcomed comments on the Q&A sheet.

B. Consensus Committees in Collaboration with RP3C
See Attachment 12C for the status of consensus committee projects tracked by RP3C.

C. RIBP Community of Practice (CoP)
Kadambi updated members on the CoP which was started in February 2020. The CoP is scheduled on the last Friday of every month at 3:00pm eastern. Three CoPs have been held. Kadambi would welcome participation of more Standards Board members in the CoPs. The CoP sessions have been recorded and will be made available when possible. A request was made to Kadambi to make RP3C products available to ANS Professional Divisions for their information and feedback.

ACTION ITEM 6/2020-15: Prasad Kadambi to provide RP3C products to the Divisions for their information and feedback.
DUE DATE: September 1, 2020

11. Consensus Committee Chair Reports

A. Environmental and Siting Consensus Committee (ESCC)
See the ESCC Report (Attachment 13) for the status of all ESCC projects.

B. Fuel, Waste, and Decommissioning Consensus Committee (FWDCC)
See the FWDCC Report (Attachment 14) for the status of all FWDCC projects.

C. Joint Committee on Nuclear Risk Management (JCNRM)
See the JCNRM Report (Attachment 15) for the status of all JCNRM projects. Robert Budnitz stressed that ANS and ASME are working well together and reported that the JCNRM has great volunteer participation including a vast number of young professionals. The JCNRM is focusing on the next edition of the Level 1 PRA standard and expediting the non-LWR standard. The non-LWR standard is being expedited at the request of the industry and NRC because it is a requirement for risk-informed licensing. Budnitz added that the JCNRM's SubCommittee on Risk Application has a good working relationship with RP3C.

D. Large Light Water Reactor Consensus Committee (LLWRCC)
See the LLWRCC Report (Attachment 16) for the status of LLWRCC projects. Michelle French added that the committee's performance activities are being addressed with the help of Steven Stamm. Several open working group positions are also being addressed. Robert Budnitz said that he discussed the proposed new standard ANS-3.15, "Risk-Informing Critical Digital Assets (CDAs) for Nuclear Power Plant Systems," with Michael Muhlheim, the working group chair. The working group will consider the use of a trial-use standard or guidance document when the draft is complete. French will continue to keep the Standards Board apprised of the progress on ANS-3.15.

E. Nonreactor Nuclear Facilities Consensus Committee (NRNFCC)
See the NRNFCC Report (Attachment 17) for the status of NRNFCC projects. James O'Brien reported that ANS-3.14. "Process for Aging Management and Life Extension of Nonreactor Nuclear Facilities," is expected to move forward in the next three to six months. The committee's other project, ANS-57.11, "Integrated Safety Assessments for Nonreactor Nuclear Facilities," has been controversial for some time and lost the support of its working group chair when he retired. O'Brien will be reaching out to the working group for a new chair and feedback on a path forward. The NRNFCC is looking at additional new standards on aging management.

F. Nuclear Criticality Safety Consensus Committee (NCSCC)
See the NCSCC Report (Attachment 18) for the status of NCSCC projects. Larry Wetzel provided a summary of his report. He added that the NCSCC has good participation and is well staffed.

G. Research and Advanced Reactors Consensus Committee (RARCC)
See the RARCC Report (Attachment 19) for the status of RARCC projects. George Flanagan reviewed his report. He recognized that proposed new standard ANS-30.2, "Structures, Systems, and Component Classification for Nuclear Power Plants," has been put on hold until the LMP has been finalized.

H. Safety and Radiological Analyses Consensus Committee (SRACC)
See the SRACC Report (Attachment 20) for the status of SRACC projects. Andrew Smetana highlighted a few items on his report. He added that he recently learned contact has been lost

with the chair leading a revision of ANSI/ANS-10.4-2008 (R2016), "Verification and Validation of Non-Safety-Related Scientific and Engineering Computer Programs for the Nuclear," but a working group member has expressed interest.

12. Other Committee Reports (from members who have information to report)

A. Standards Board Task Groups (TG) (TG List/Scopes – Attachment 21)

- Policy Task Group (Chair: Arndt)
  Changes to policies and procedures were discussed under Agenda Item 7 B and C.

- External Communications Task Group (Chair: Open)
  As the new chair, Donald Spellman acknowledged that he has a lot to do to get caught up.

- Internal Communications Task Group (Chair: Turkowski)
  Reported under Agenda Item 8.

B. Liaison reports (Full Liaison List – Attachment 22)

External Liaisons to the Standards Board

- American National Standards Institute (ANSI): Prasad Kadambi
  The ANSI Policy Committee has been renamed the ANSI National Policy Advisory Group. Kadambi continues to attend the meetings on behalf of ANS.

- American Society of Civil Engineers (ASCE): Carl Mazzola
  No report provided.

- Electric Power Research Institute (EPRI): Andrew Sowder
  Sowder confirmed that he reviews PINS for anything relevant to EPRI. Their primary engagement is currently with the JCNRM. Sowder reached out to people at the American Concrete Institute and NEI with a recommendation to appoint a liaison to the Standards Board.

- Electrical and Electronics Engineers (IEEE)/Nuclear Power Engineering Committee (NPEC):)
  Donald Spellman (SB liaison to NPEC)/Richard Wood (NPEC liaison to SB)
  NPEC held its last meeting on January 29, 2020, and just released minutes a few days ago. Spellman will review the minutes and let members know if there are any activities relevant to ANS. Steven Arndt gave a presentation at their meeting on the ANS SCARP report. The issue is how to interface with NPEC on the broader standards.

- Institute of Nuclear Power Operations (INPO): Open

- International Organization of Standardization (ISO)/Technical Committee (TC) 85/Subcommittee (SC) 6: Donald Spellman
  Spellman recently accepted the role of overall advisor for Subcommittee 6 on reactor technology. He reported that the subcommittee was active on harmonization work and that he has submitted several suggestions. The U.S. Nuclear Technical Advisory Group held a virtual meeting yesterday.

- NCRP: Open

- NEI: Open
- NFPA: Open

13. Other Business

Members briefly discussed whether a standard should be initiated when no general practice exists. An alternate could be to use experience from another industry that could be applicable to nuclear under certain circumstances. The PINS process was questioned as a possible vehicle to flush out the details. Members agreed that this topic should be discussed in greater detail at a subsequent meeting.

ACTION ITEM 6/2020-16: Pat Schroeder to add an agenda item for the November 2020 meeting to discuss initiating a new standard when a standardized practice has not been established.
DUE DATE: November 1, 2020

When questioned by Donald Spellman, Schroeder confirmed that ANS has not adopted any ISO standards and added that she isn't familiar with the process. With interest from Spellman, Schroeder stated that she would work with Spellman to explore benefits.

ACTION ITEM 6/2020-17: Donald Spellman to work with Pat Schroeder to explore the benefit of ANS on adopting ISO standards.
DUE DATE: November 1, 2020

14. Review of Action Items from This Meeting

New action items assigned at the meeting were reviewed and confirmed.

15. Future Meetings

- 2020 ANS Winter Meeting at Chicago Marriott Downtown from November 15-19
- 2021ANS Annual Meeting at Omni Convention Center in Providence, RI, from June 13-17

The next SB meeting, hopefully in person, is scheduled on Tuesday, November 17, 2020, during the ANS Annual Winter meeting in Chicago.

16. Adjournment

With no further business, the meeting was adjourned.

American Nuclear Society

Standards Board Action Item Status as Reported at 6/9/20 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
6/2020-01	George Flanagan to work with Pat Schroeder for a promotion to solicit volunteers for advanced reactor standards when ready. DUE DATE: January 1, 2021	George Flanagan, Pat Schroeder	
6/2020-02:	Pat Schroeder to make sure that future election ballots of new members include resumes. DUE DATE: On-going	Pat Schroeder	
6/2020-03	Carl Mazzola to chair the 2021 Standards Service Selection Committee with support of Robert Budnitz, John Nakoski, William Turkowski, and Larry Wetzel. DUE DATE: May 1, 2021	Carl Mazzola, Robert Budnitz, John Nakoski, William Turkowski, Larry Wetzel	
6/2020-04	Pat Schroeder to distribute the current ANS Change Plan to members. DUE DATE: June 15, 2020.	Pat Schroeder	
6/2020-05	Pat Schroeder to add JCNRM to the 2020 Consensus Committee Evaluation Report with information from Robert Budnitz. DUE DATE: January 31, 2021	Robert Budnitz, Pat Schroeder	
6/2020-06	Ed Wallace to help Mark Linn respond to comments related to NEI18-04 from the RARCC preliminary ballot of ANS-30.1, “Integrating Risk and Performance Objectives into New Reactor Safety Designs.” DUE DATE: September 1, 2020	Ed Wallace, Mark Linn	
6/2020-07	Pat Schroeder to draft an appeals policy and send to Steven Stamm, Robert Budnitz, George Flanagan and Carl Mazzola to review. DUE DATE: August 1, 2020	Pat Schroeder, Steven Stamm, Robert Budnitz, George Flanagan, Carl Mazzola	
6/2020-08	James O’Brien and Prasad Kadambi to make a brief presentation on risk-informed, performance-based methods to the ANS-19 Subcommittee on Reactor Physics at their next meeting during the ANS Winter Meeting. DUE DATE: November 16, 2020	James O’Brien, Prasad Kadambi	
6/2020-09	Pat Schroeder to include a discussion on the LLWRCC agenda for the July teleconference to discuss the path forward for ANS-3.8.7, “Properties of Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness at Nuclear Facilities.” DUE DATE: July 29, 2020	Pat Schroeder	

Standards Board Action Item Status as Reported at 6/9/20 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
6/2020-10	Pat Schroeder to provide Michelle French the history of ANS-3.8.7, "Properties of Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness at Nuclear Facilities," and letter from NEI with their position on draft standard ANS-3.8.7. DUE DATE: June 15, 2020	Pat Schroeder	OPEN
6/2020-11	Prasad Kadambi to provide his white paper on the LMP to Amir Afzali and George Flanagan to determine if it can be used as guidance on how and where NEI 18-04, "Risk-Informed Performance-Based Technology Guidance for Non-Light Water Reactors," should be used in ANS standards (Related to Action Item 11/2019-18). DUE DATE: September 1, 2020	Prasad Kadambi, Amir Afzali, George Flanagan	OPEN
6/2020-12	Steven Stamm to work with Prasad Kadambi on updating RP3C actions on the SMART Matrix with the proposed changes to include specificity. DUE DATE: September 15, 2020	Steven Stamm, Prasad Kadambi	OPEN
6/2020-13	Donald Spellman to work with Steven Stamm to update the actions for the External Communications Task Group Chair. DUE DATE: September 15, 2020	Donald Spellman, Steven Stamm	OPEN
6/2020-14	Steven Stamm to send the revised SMART Matrix to the Standards Board for review and comment. DUE DATE: September 15, 2020	Steven Stamm	OPEN
6/2020-15	Prasad Kadambi to provide RP3C products to the Divisions for their information and feedback. DUE DATE: September 1, 2020	Prasad Kadambi	OPEN
6/2020-16	Pat Schroeder to add an agenda item for the November 2020 meeting to discuss initiating a new standard when a standardized practice has not been established. DUE DATE: November 1, 2020	Pat Schroeder	OPEN
6/2020-17	Donald Spellman to work with Pat Schroeder to explore the benefit of ANS on adopting ISO standards. DUE DATE: November 1, 2020	Donald Spellman, Pat Schroeder	OPEN
11/2019-01	Steven Arndt to provide SB members a copy of the SCARP report on advanced reactors standards when issued.	Arndt	CLOSED Provided 11/22/19

Standards Board Action Item Status as Reported at 6/9/20 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
11/2019-02	Robert Budnitz, George Flanagan, Carl Mazzola, and Gene Carpenter (or alternate) to draft a revision to the appeals policy for the Standards Board to review at the June 2020 meeting.	Budnitz, Flanagan, Mazzola, Carpenter	CLOSED A revision to the policy was completed and issued for ballot. An objection was discussed at the 6/9/20 meeting and a new action item was assigned to Pat Schroeder to draft a policy to incorporate guidance on time frames for completion.
11/2019-03	Pat Schroeder to facilitate a teleconference for Robert Budnitz, George Flanagan, Carl Mazzola, and Gene Carpenter (or alternate) to draft a revision to the appeals policy.	Schroeder	CLOSED Teleconference held 1/23/20.
11/2019-04	Pat Schroeder to check on the database being developed by the Diversity and Inclusion Group and determine if it might be useful for standards. NOTE: Steven Arndt to approve correspondence first.	Schroeder	CLOSED P. Schroeder talked to D. Goldberg. Their database is at the concept stage. They may initially use Excel to store a list of potential speakers. Like us, they are also interested in using netForum, our AMS, as a database (DB). Goldberg agreed that our needs for a volunteer DB are very similar and thought that any enhancement of netForum should consider both our needs.
11/2019-05	Pat Schroeder to notify Marilyn Kray, Mary Lou Dunzik-Gougar, and Craig Piercy when the young member/associate member webpage is launched.	Schroeder	CLOSED Notified 3/10/20.
11/2019-06	Donald Eggett to discuss the standards volunteer database with Mary Lou Dunzik-Gougar to gain her support. DUE DATE: September 1, 2020	Eggett	OPEN This action was amended to the current SB Chair to discuss with the current ANS President.
11/2019-07	Andrew Sowder to provide Steven Arndt and Pat Schroeder the contact information of Tom Basso (potential new NEI point of contact for ANS standards).	Sowder	CLOSED T. Basso info provided.
11/2019-08	Pat Schroeder to check with Rick Michal and Mike McQueen on using the SCARP report on advanced reactor standards as the basis for a Nuclear News article.	Schroeder	CLOSED An article on the SCARP report for standards and codes was well received by NN.
11/2019-09	Pat Schroeder to update the Policy Manual with the revised policy on guidance standards and documents as approved by motion.	Schroeder	CLOSED Revised manual is available HERE.

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Standards Board Action Item Status as Reported at 6/9/20 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
11/2019-10	William Turkowski to reach out to the PDC Chair before each ANS national meeting with a request for him/her to remind their members of the PD/SC Liaison Program.	Turkowski	CLOSED W. Turkowski sent an email to the PDC Chair and Vice Chairs in advance of the meeting.
11/2019-11	Larry Wetzel (lead) with James O'Brien and Steve Stamm to work on a process to handle comments and objections from Standards Committee members that are not members of the formal balloting committee and present to the SB for consideration at the next meeting.	Wetzel, O'Brien, Stamm	CLOSED A teleconference was held 1/8/20 and a revised procedure was issued for ballot and approved. The procedure can be found in Sec. 5.2 (¶2) of the CC Procedures).
11/2019-12	Pat Schroeder to add Robert Budnitz and George Flanagan to the ANS-3.15 Working Group roster in ANS Collaborate as observers.	Schroeder	CLOSED
11/2019-13	Prasad Kadambi to consult with James O'Brien and Ed Wallace on updated completion dates for Goal 1, D.1 of the SMART Matrix and then to inform Steven Stamm.	Kadambi	CLOSED
11/2019-14	Pat Schroeder to add the bullets preceding the CC chair reports under each CC report on future agendas. DUE DATE: June 1, 2020	Schroeder	CLOSED Bullets added to agenda

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Standards Board Action Item Status as Reported at 6/9/20 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
11/2019-15	George Flanagan to draft a letter for Steven Arndt to the NRC Standards Executive with a position on using research reactor standards for micro reactors.	Flanagan	CLOSED The BNL report indicates that NUREG 1537 (non-power reactor guidance) references ANS standards and is a possible alternative to NUREG 800 which is used for commercials LWRs. Since this was issued, there is a 2nd report from SNL that NRC is reviewing but has not sent out that further discusses this issue. Additionally, since then Oklo has submitted an application for a license to NRC which uses some of the concepts in NUREG 1537 such as a maximum hypothetical accident that non-power reactors use. Flanagan has looked at their application but has not been able to determine if they intend to use ANS standards instead of the commercial LWR standards. The NRC Standards Exec discussed the need for standards and revisions to existing standards for advanced reactors on 4/2/20. This was in response to the NEI report on priority standards where ANS standards played a role. She did not mention specifically non-power reactor standards for micro reactors. She did announce they are planning a standards forum in September (probably the 15th). The submission by Oklo (first micro reactor), the plans for the upcoming standards forum, issuance of the NEI report along with the ANS SCARP Report was considered sufficient to close this action.
11/2019-16	Pat Schroeder to draft a letter of invite on behalf of Donald Eggett to send to INPO once an INPO contact is identified. DUE DATE: This action will be completed ~two weeks after contact identified.	Schroeder	OPEN This action item was amended to the current SB Chair, D. Eggett, to follow up
11/2019-17	Pat Schroeder to remove the SCoRA liaison role from the external liaison list.	Schroeder	CLOSED

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Standards Board Action Item Status as Reported at 6/9/20 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
11/2019-18	Amir Afzali, George Flanagan, and Prasad Kadambi to prepare a white paper on how and where NEI 18-04 should be used in ANS standards. DUE DATE: July 31 2020	Afzali, Flanagan, Kadambi	OPEN Call held 12/17/19 to discuss. A. Afzali agreed to draft white paper. P. Kadambi suggested that his LMP white paper may address this issue. A new action item was assigned for Afzali and Flanagan to review Kadambi's white paper and make an assessment.
11/2019-19	Robert Roche-Rivera to check with NRC and let the Standards Board know when a stakeholders meeting is being held on 10 CFR Part 53, Risk-informed, Technology Inclusive Regulatory Framework for Advanced Reactors Rulemaking.	Roche-Rivera	OPEN Several public meetings are expected. NRC should issue advanced notice of rulemaking by the end of 2020.
6/2019-03	Donald Eggett to lead the 2020 Standards Service Award Selection committee with support from Robert Budnitz, Gene Carpenter, Steven Stamm, and Larry Wetzel.	Eggett, Budnitz, Carpenter, Stamm, Wetzel	CLOSED
6/2019-04	Donald Eggett to contact Mike Tschiltz at NEI to inquire about a new liaison as well as on the availability of their standards priority survey feedback. DUE DATE: September 1, 2020	Eggett	OPEN S. Arndt held several discussions with NEI, and a liaison appointment is pending. This action item has been amended with the current SB Chair responsible.
6/2019-07	Donald Eggett (lead), George Flanagan, Prasad Kadambi, and Mark Linn to evaluate the current balance of interest definitions (Annex A) and propose a revision of the "Individual" category. DUE DATE: November 1, 2020	Eggett, Flanagan, Kadambi, Linn	OPEN
6/2019-19	George Flanagan and Gene Carpenter to discuss the implications of the INPRO Report and determine if there is a need for ANS standards action on micro and/or movable reactors.	Flanagan, Carpenter	CLOSED Members agreed to close this action.
11/2018-14	Gene Carpenter, George Flanagan, Dave Hillyer, Carl Mazzola, and James O'Brien, to respond to the RP3C proposed approach as provided in the RP3C presentation report (slides 5-10) at the November 13, 2018, Standards Board meeting.	Carpenter, Flanagan, Hillyer, Mazzola, O'Brien	CLOSED
11/2018-16	James O 'Brien to ask Garrett Smith, DOE's Standards Executive, to nominate a representative for ANS-3.16, "Meteorological Aspects of Wildland Fire Response."	O'Brien	CLOSED Request made directly to G. Smith 6/11/19 during the SB meeting and Smith confirmed receipt.
11/2018-19	Steven Arndt and Robert Budnitz to discuss lessons learned from the use of trial use standards.	Arndt, Budnitz	CLOSED

Standards Board Action Item Status as Reported at 6/9/20 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
11/2018-20	Gene Carpenter to setup a teleconference with NRC to proactively discuss changes and answer any questions (within the appropriate restrictions) on ANS-3.5, "Nuclear Power Plant Simulators for Use in Operator Training and Examination" (revision of ANSI/ANS-3.5-2009).	Carpenter	CLOSED A letter to request NRC endorsement was sent and a response was rec'd 4/21/20. NRC staff will consider endorsing ANS-3.5-2018 in a revision of RG 1.149. Rev. of RG 1.149 to start CY 2020.
11/2018-21	John Nakoski to work on the appointment of a NRC representative to the LLWRCC. DUE DATE: November 1, 2020	Nakoski	OPEN This action was amended to remove G. Carpenter. Nakoski confirmed that NRC is aware of the need and working on this action.
11/2018-26	Andrew Smetana to contact Prasad Kadambi for RP3C guidance on including performance-based methods in ANS-19 standards.	Smetana, Kadambi	CLOSED A new action item was assigned for P. Kadambi and J. O'Brien to make a presentation to ANS-19 at their November meeting.
6/2018-01	Donald Eggett, Prasad Kadambi, Andrew Sowder, and William Turkowski to develop a strategy for how the ANS Standards Committee plans to be proactive and ready to take the lead in development of advanced reactor standards.	Eggett, Kadambi, Sowder, Turkowski	CLOSED Members agreed that the ANS/NEI workshop scheduled for 6/23/20 addressed this action.
6/2018-02	Donald Eggett and Andrew Sowder to contact Standards Board members on possible changes to industry priorities for standards development. DUE DATE: November 1, 2020	Eggett	OPEN A. Sowder offered to help D. Eggett.
6/2018-16	Gene Carpenter to keep Steven Arndt, Don Eggett, Robert Budnitz, and Gerry Kindred informed of progress on ANS-3.15 (cybersecurity standard) on a quarterly basis.	Carpenter	CLOSED G. Flanagan & R. Budnitz have been added to the WG as observers to fulfill the need to keep other CCs informed.
6/2018-19	Donald Eggett to make some inquiries to identify a potential INPO liaison to the Standards Board. DUE DATE: September 1, 2020	Eggett	OPEN This action has been amended to give D. Eggett the responsibility. (See Action Item 11/2019-16 for a separate action item to draft an invitation)
10/2017-25	Gene Carpenter to contact DOE staff member to follow up on the review of ANS-3.8.7, "Criteria for Planning, Development, Conduct and Evaluation of Drills and Exercises for Emergency Preparedness."	Carpenter	CLOSED With no DOE response, a new action item was assigned for the LLWRCC to discuss the path forward during their July 29, 2020, teleconference.

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Standards Board Action Item Status as Reported at 6/9/20 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
10/2017-28	Steven Arndt to set up a meeting with senior NEI leaders.	Arndt	CLOSED S. Arndt has had several meetings with NEI leadership.
06/2017-18	The Policy TG to determine how the statement on standards development drafted by Robert Busch is addressed.	Arndt/ Policy TG	CLOSED The policy on including a RIPB statement in the foreword of all standards was revised to address this issue.
6/2016-03	NEI contact to help coordinate ANS work on advanced reactor standards with other SDOs and industry.	NEI Liaison	CLOSED The ANS/NEI workshop for industry and SDOs was deemed sufficient to close this action.
6/2016-18	Gene Carpenter to discuss the needed action on standards ranked 11-20 on the standards priority survey with the LLWRCC and provide input at the SB at the next call/meeting.	Carpenter	CLOSED
11/2015-21	The LLWRCC to approve a PINS for a cybersecurity standard and forward to the standards manager.	Carpenter	CLOSED The PINS was approved by the LLWRCC and issued to the SB. The SB ballot closed 4/30/20 with one negative currently being addressed.

ATTACHMENT 1

Standards Board Informative Report to the ANS Board of Directors

from

Standards Board Chair Steven A. Arndt

June 2020

Plans to Address Advanced Reactor Standards Needs

The ANS Standards Board and members of the Research and Advanced Reactors Consensus Committee have been working with the Special Committee on Advanced Reactor Policy to find ways to continue to advance the recommendations provided in the committee's special report. In addition, NEI has developed a report with recommendations (NEI 19-03, "Advanced Reactor Codes and Standards Needs Assessment" 12/30/19) on activities that should be done by standards development organizations to support the design, development and licensing of advanced reactors. In line with this, the Standards Board and ANS staff are working with NEI to co-sponsor a workshop in June to further develop standards needs and implementation strategies. This work will continue with the next planned activity being active participation in the NRC Standards Forum, tentatively scheduled for September 2020 that will also focus on advanced reactors standards.

Presentation to IEEE Nuclear Power Engineering Committee

The Standards Board Chair made a presentation to the IEEE Nuclear Power Engineering Committee (NPEC) on January 29, 2020. The presentation provided NPEC members a summary of the Special Report, "Setting the Right Bar: "How Consensus Standards Help Advanced Reactor Development," prepared by the Special Committee on Advanced Reactor Policy. The presentation was well received.

NRC Grant Proposal Submitted to Support Development of Probabilistic Risk Assessment Standards

A grant was awarded by the U.S. Nuclear Regulatory Commission to support development of voluntary consensus standards that establish safety and risk criteria and methods for probabilistic analysis, risk analysis, risk assessment, and risk management. The grant continues coverage of previous grants awarded. This new grant is effective from February 4, 2020, through February 3, 2025. The grant funds cover travel reimbursement for eligible members without company support, general meeting expenses, and administrative support.

Progress Update on the Risk-informed, Performance-based Principles and Policy Committee Activities

The Standards Board formed the Risk-informed, Performance-based Principles and Policy Committee in 2013 to establish the approaches, priorities, responsibilities and schedules for implementation of risk-informed and performance-based (RIPB) principles in ANS standards. The following activities have been completed or are in progress to fulfill the committee's charter:

- A RIPB Guidance Document was prepared to identify roles and responsibilities and the process for using RIPB approaches. The guidance document is titled "Incorporating Risk-Informed and Performance-Based Approaches/Attributes in ANS Standards."
- A RIPB Community of Practice (CoP) was launched to support knowledge sharing on the development and application of RIPB principles and practices within the nuclear industry. Starting February 2020, the CoP has held monthly online collaboration meetings on the last Friday of every month, beginning at 3 p.m. eastern/12 p.m. pacific and lasting about 30 minutes. The CoP is open to all.
- A two-part training module was initiated May 2020 to provide guidance to ANS working groups on incorporation of RIPB methods in ANS standards.

Spotlighting Young Professionals in ANS Standards

The Standards Board launched the Young Professionals Participate in ANS Standards Program webpage in March 2020. The webpage recognizes young professionals involved in the ANS standards program. The site includes a photo of each individual along with a brief statement explaining how they became involved in the standards program and a little of their background. These individuals initially joined a standards working group as a nonvoting Associate Member. Several of the individuals on the webpage are now full members. Our Associate Member Program was created about 10 years ago at the request of the Young Member Group as a way to participate in standards with little to no experience. We presently have more than 40 Associate Members engaged in our program and hope to eventually include many more on the webpage.

Update on Standards Appeal

The technical appeal on ANS-54.1, "Nuclear Safety Criteria and Design Process for Sodium Fast Reactor Nuclear Power Plants," was completed. Ultimately, a few clarifications were made to the standard in agreement with the appealer. The technical appeals committee did not agree with one of the three comments resulting in a maintained objection. The standard was approved by the American National Standards Institute on March 23, 2020. Publication of the standard is expected in June.

Certification of Consensus Committee Balance of Interests

The Standards Board reviewed the balance of interest reports for eight consensus committees and certified that all consensus committees are in compliance with requirements as specified in the ANS Standards Committee Rules and Procedures. The approval was conducted via e-ballot May 2020.

Report of Standards Sales

The bulk of revenue from standards sales continues to come from the Information Handling Services (IHS) for electronic subscriptions to the collection of our standards. Subscriptions are typically to large organizations, national laboratories, and government agencies with multiple users. Access and restrictions are controlled by IHS based on the subscription contract. Techstreet continues to host our partnered store and offers print on demand, electronic copies, and subscriptions. ANS continues to print large quantity orders directly and sells older historical standards that are no longer available in the store.

Total calendar year 2019 sales were $ 270,045.08. First quarter (January – March) 2020 were $ 86,680.20, which was 11% higher than the same period in last year.

Standards Action Activities (Since last report)

The following standards projects were initiated:

- ANS-8.22-202x, Nuclear Criticality Safety Based on Limiting and Controlling Moderators (revision of ANSI/ANS-8.22-1997; R2016)
- ANS-18.1-202x, Radioactive Source Term for Normal Operation of Light Water Reactors (revision of ANSI/ANS-18.1-2016)
- ANS-19.3-202x, Steady-State Neutronics Methods for Power Reactor Analysis (revision of ANSI/ANS-19.3-2011; R2017)
- ANS-57.9-202x, Design Criteria for an Independent Spent Fuel Storage Installation (Dry Storage Type) (new standard, supersedes ANSI/ANS-57.9-1991; W2010)

The following standards and/or draft standards were issued for ballot and public review:

- ANS-2.27-202x, "Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments" (revision of ANSI/ANS-2.27-2008; R2016)
- ANS-2.29-202x, "Probabilistic Seismic Hazard Analysis" (revision of ANSI/ANS-2.29-2008; R2016)
- ANS-2.30-2015 (R202x), Criteria for Assessing Tectonic Surface Fault Rupture and Deformation at Nuclear Facilities (reaffirmation of ANSI/ANS-2.30-2015)
- ANS-3.11-2015 (R202x), Determining Meteorological Information at Nuclear Facilities (reaffirmation of ANSI/ANS-3.11-2015)
- ANS-5.4-2011 (R202x), Method for Calculating the Fractional Release of Volatile Fission Products from Oxide Fuel (reaffirmation of ANSI/ANS-5.4-2011)
- ANS-6.1.1-202x, Neutron and Photon Fluence-to-Dose Conversion Coefficients (new standard, supersedes ANSI/ANS-6.1.1-1991; W2001)
- ANS-6.6.1-2015 (R202x), Calculation and Measurement of Direct and Scattered Radiation from LWR Nuclear Power Plants (reaffirmation of ANSI/ANS-6.6.1-2015)
- ANS-8.20-1991 (R202x), Nuclear Criticality Safety Training [reaffirmation of ANSI/ANS-8.20-1991; R2015)
- ANS 18.1-202x, Radioactive Source Term for Normal Operation of Light Water Reactors (revision of ANSI/ANS-18.1-2016)
- ANS-51.10-202x, Auxiliary Feedwater System for Pressurized Water Reactors (revision of ANSI/ANS-51.10-1991; R2018)
- ANS-56.8-202x, Containment System Leakage Test Requirements (revision of ANSI/ANS 56.8-2002; R2016)
- ANS-57.8-202x, Fuel Assembly Identification (revision of ANSI/ANS-57.8-1995; R2017)
- ANS-58.9-2002 (R202x), Single Failure Criteria for Light Water Reactor Safety-Related Fluid Systems (reaffirmation of ANSI/ANS-58.9-2002; R2015)
- ANS-58.16-2014 (R202x), Safety Classification and Design Criteria for Nonreactor Nuclear Facilities (reaffirmation of ANSI/ANS-58.16-2014)
- ANS-59.51-1997 (R202x), Fuel Oil Systems for Safety-Related Emergency Diesel Generators (reaffirmation of ANSI/ANS-59.51-1997; R2015)

- ANS-59.52-1998 (R202x), Lubricating Oil Systems for Safety-Related Emergency Diesel Generators (reaffirmation of ANSI/ANS-59.52-1998; R2015)

The following standards were approved:

- ANSI/ANS-2.8-2019, Probabilistic Evaluation of External Flood Hazards for Nuclear Facilities (new standard, supersedes ANS-2.8-1992; W2002)
- ANS-2.27-2020, Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments (revision of ANSI/ANS-2.27-2008; R2016)
- ANSI/ANS 2.29-2020, Probabilistic Seismic Hazard Analysis (revision of ANSI/ANS-2.29-2008; R2016)
- ANSI/ANS-2.30-2015 (R2020), "Criteria for Assessing Tectonic Surface Fault Rupture and Deformation at Nuclear Facilities" (reaffirmation of ANSI/ANS-2.30-2015)
- ANSI/ANS-3.1-2014 (R2020), Selection, Qualification, and Training of Personnel for Nuclear Power Plants (reaffirmation of ANSI/ANS-3.1-2014)
- ANSI/ANS-3.11-2015 (R2020), Determining Meteorological Information at Nuclear Facilities (reaffirmation of ANSI/ANS-3.11-2015)
- ANSI/ANS-5.4-2011 (R2020), Method for Calculating the Fractional Release of Volatile Fission Products from Oxide Fuel (reaffirmation of ANSI/ANS-5.4-2011)
- ANSI/ANS-6.6.1-2015 (R2020), Calculation and Measurement of Direct and Scattered Gamma Radiation from LWR Nuclear Power Plants (reaffirmation of ANSI/ANS-6.6.1-2015)
- ANSI/ANS-8.10-2015 (R2020), Criteria for Nuclear Criticality Safety Controls in Operations with Shielding and Confinement (reaffirmation of ANSI/ANS-8.10-2015)
- ANSI/ANS-15.16-2015 (R2020), Emergency Planning for Research Reactors (reaffirmation of ANSI/ANS-15.16-2015)
- ANSI/ANS-19.6.1-2019, Reload Startup Physics Tests for Pressurized Water Reactors (revision of ANSI/ANS-19.6.1-2011; R2017)
- ANSI/ANS-54.1-2020, Nuclear Safety Criteria and Design Process for Liquid-Metal-Cooled Nuclear Power Plants (new standard)
- ANSI/ANS-57.1-1992 (R2019), Design Requirements for Light Water Reactor Fuel Handling Systems (reaffirmation of ANSI/ANS-57.1-1992; R2015)
- ANSI/ANS-58.16-2014 (R2020), Safety Categorization and Design Criteria for Nonreactor Nuclear Facilities (reaffirmation of ANSI/ANS-58.16-2014)

The following standards were published:

- ANSI/ANS-2.8-2019, Probabilistic Evaluation of External Flood Hazards for Nuclear Facilities (new standard)
- ANSI/ANS-19.6.1-2019, Reload Startup Physics Tests for Pressurized Water Reactors (revision of ANSI/ANS-19.6.1-2011; R2016)

ATTACHMENT 2

ANS Standards Board Meeting

ANS Annual Meeting, Phoenix, AZ

June 8-11, 2020

Vice Chairman's Report

Possible Changes in Industry Priorities for Standards Development (Eggett Action Item 6/2018-02)

As a result from the September 2018 and 2019 Standards Forums, action items came out assigned to NEI, one being to identify and prioritize areas of standards the industry needs. The Standards Board received a report from Marcus Nichol of NEI dated January 23, 2020 providing NEI's assessment on setting priorities for standards based on their "survey" to the industry.

ACTION: The NEI report (NEI 19-03) needs to be reviewed by the Board to determine its accuracy and completeness and if the results are consistent with the Standards Board current thinking and drawn conclusions. Eggett currently remains as point of contact for this action item and now is looking for volunteers to assist in evaluating this report and in moving this NEI report and subject matter forward.

It is anticipated that this Action Item 6/2018-02 can now be closed pending further discussions, actions, and decisions on how to proceed.

ANS to Lead in Advanced Reactor (AR) Standards Development

HISTORY:
A team of Eggett, Turkowski, Kadambi, and Sowder held a teleconference in August 2018 to discuss plans for addressing the action received (6/2018-01). The assigned action was to develop a strategy to determine how the ANS Standards Committee could be proactive and ready to take the lead in development of advanced reactor standards. This action was put on hold until there was a better understanding of what John Kelly's AR team was doing and what results would be provided moving forward.

ACTION:
A meeting of the Kelly's AR committee met in the fall of 2018 with the NRC to discuss the subject of grants for standards and other items requiring decisions related to the ARs.

In addition, a report from the President's Special Committee on Advanced Reactors was developed and shared at the November 2019 Standards Board meeting.

Currently, this Action Item 6/2018-01 currently remains open pending further discussions, actions, and decisions on how to proceed.

Status of Recent Appeals

The appeal on ANS-54.1, "Nuclear Safety Criteria and Design Process for Sodium Fast Reactor Nuclear Power Plants," was completed. Ultimately, a few clarifications were made to the standard in agreement

with the appealer. The standard was approved by the American National Standards Institute on March 23, 2020. Publication of the standard is expected in June.

Standards Service Award Selection

The due date for nominations for the 2020 Standards Service Award was extended twice at the request of nominators. The initial due date of March 1 was extend to March 20 and then to March 30. The selection committee held a teleconference on April 14. Two nominees were selected and will be presented to the Standards Board for approval.

Appointment of 2020 Selection Committee

Vice Chair General Comments

Change Plan 2020 and its potential impact on ANS standards and ANS Standards Board lack of visibility

NEI's engagement in Advanced Reactors (AR) standards and industry standards as a whole and the need for prioritization especially in Advanced Reactors

ATTACHMENT 3

Secretary/Staff Report
2020 ANS Annual Meeting

Changes to Standards Staffing, Reporting Structure, and Remote Work

As of February 2020, the standards program was moved from the Publications Department to the Meetings and Programs Department headed by Paula Cappelletti. The move is part of an internal restructuring associated with the Change Plan. John Fabian, who had supported the JCNRM and managed the PRA standards grant, was promoted to Publications Director. With the change, support of the JCNRM and grant was reassigned to Pat Schroeder. Kathy Murdoch was moved from part time (30 hours) to full time. Murdoch has taken over all responsibilities regarding facilitating volunteer placement, tracking associate members, and full responsibility for managing volunteer records in Collaborate and in our internal volunteer database (Filemaker) while maintaining all previous responsibilities. Staff physically moved offices to re-align with the new organizational structure in the middle of March. No sooner had the move been completed and the office was closed due to the pandemic. As of March 17, 2020, staff moved to a remote work environment along with most non-essential workers in the U.S. The pandemic also caused the physical 2020 ANS Annual Meeting to move to a fully virtual platform. Both Murdoch and Schroeder will be supporting panel sessions as staff producers to support the virtual platform.

ANS Collaborate Usage Stats for the Standards Board and Consensus Committees

The Standards Committee Members site now recognizes 774 Standards Committee members. The number represents an increase of 31 members from the November 2019 report. Consensus committee ballot usage for the Standards Board and consensus committees is provided below:

Committee	**2015 Ballots Issued**	**2016 Ballots Issued**	**2017 Ballots Issued**	**2018 Ballots Issued**	**2019 Ballots Issued**	**2020 Ballots Issued** (through 5/20/20)
Standards Board	25	64	53	31	37	22
ESCC	11	25	25	12	16	13
FWDCC	3	17	15	2	4	3
LLWRCC	13	17	17	19	13	14
NCSCC	6	10	17	7	13	8
NRNFCC	5	4	2	4	10	3
RARCC	6	14	5	5	6	7
SRACC	5	14	10	7	5	8

Standards Committee Engagement of Young Professionals

In March 2020, the new webpage, Young Professionals in Standards, was launched. The site includes a photo of 8 young professionals along with a brief statement explaining how they became involved in our program and a little of their background. These individuals joined a standards working group as a nonvoting associate member. Several of the individuals on the webpage are now full members. We will continue to add young professionals interested in being recognized.

The Associate Member Program continues to grow. Working group chairs have placed 79 young professionals of which 13 are now full members. An additional 7 associate members are members of multiple working groups and have been upgraded on one of more groups. Currently, the Standards Committee has 47 associate members with 19 associate members having resigned or were dropped for lack of response. One potential associate member is waiting for placement. A more detailed report of associate members is provided following the secretary/staff report.

Next ANSI Audit Scheduled

The American National Standards Institute (ANSI) has scheduled our next audit for August of 2020. ANSI audits accredited standards development organizations every five years. The 2020 audit, like the 2015 audit, will be conducted remotely. ANSI will select five or six standards that were approved since the last audit to review. The review is all inclusive for the selected standards. Typically, ANSI tries to select standards from different consensus committees with one being a reaffirmation. Standards that have maintained negatives are often selected. It is likely that ANSI/ANS-3.5-2018 and/or ANSI/ANS-54.1-2020 will be audited because appeals were filed. The audit will include a review of our accredited rules and procedures, policy manual, and procedures for consensus committees. A pre-audit teleconference is scheduled on July 1, 2020. We will likely be provided the list of standards to be audited at that time.

Standards Volunteer Database Update

An initial request was made in 2004 for the ANS Information Technology (IT) Department to create an online volunteer database that Standards Committee chairs could use to search for potential candidates to fill committee staffing needs. Many challenges have prevented its completion. It is believed that the merger of the ANS Standards Workspace into ANS Collaborate can afford a number of opportunities to use ANS Collaborate to search for candidates to fill committee staffing needs, but customization from ANS IT and support of members to complete their profiles would be needed.

The IT Department was affected by the Change Plan. Johnny Cison remains on staff as the ANS Director of Digital Technology with much of the IT Department's support being outsourced under this purview. Cison recently completed the bulk of the ANS website redesign. He was then tasked with creating a virtual platform for the 2020 ANS Annual Meeting and overseeing the upgrade of ANS's IT infrastructure. Cison takes direction for projects from the ANS Board of Directors (BOD). Staff has suggested that the ANS Standards Board Chair impress upon the BOD the necessity of an online volunteer database so that Cison is directed by the BOD to support this request.

Report of Standards Sales

The bulk of revenue from standards sales continues to come from the Information Handling Services (IHS) for electronic subscriptions to the collection of our standards. Subscriptions are typically to large organizations, national laboratories, and government agencies with multiple users. Access and restrictions are controlled by IHS based on the subscription contract. Techstreet continues to host our partnered store and offers print on demand, electronic copies, and subscriptions. ANS continues to print large quantity orders directly and sells older historical standards that are no longer available in the store.

Total standards royalty/revenue for 2019 and 2020 through 3/31/20 is reported below:

Royalties/Revenue 2019					
	1st Quarter	**2nd Quarter**	**3rd Quarter**	**4th Quarter**	**YTD**
	Actual	Actual	Actual	Actual	
I.H.S.	$ 71,139.65	$ 56,871.73	$ 31,622.61	$ 73,446.03	$ 233,080.02
Tech St.	$ 5,282.47	$ 4,452.28	$ 8,281.86	$ 7,951.85	$ 25,968.46
ANSI	$ 1,194.70	$ 2,255.50	$ 2,231.45	$ 2,897.70	$ 8,579.35
ANS Direct	$ -	$ 2,417.25	$ 4,956.00	$ -	$ 7,373.25
Total	$ 77,616.82	$ 65,996.76	$ 42,135.92	$ 84,295.58	$ 270,045.08

Royalties/Revenue 2020					
	1st Quarter	**2nd Quarter**	**3rd Quarter**	**4th Quarter**	**YTD**
	Actual	Actual	Actual	Actual	
I.H.S.	$ 73,865.53				$ 73,865.53
Tech St.	$ 6,700.12				$ 6,700.12
ANSI	$ 6,114.55				$ 6,114.55
ANS Direct	$ 2,110.10				$ 2,110.10
Total	$ 86,680.20	$ -	$ -	$ -	$ 86,680.20

A more detailed report of sales through our partnered store and direct ANS sales is provided following this report.

ANS Direct ANS Techstreet Store Sales Report (Oct. 1, 2019 -- March 31, 2020)

Doc No	Title	Qty	Vendor Price	Gross Revenue	Total Discount %	Disc Amount	Gross Revenue After Discount	Source	Format	% Due	Royalty Amount	Fullfillment Method	MultiUser
NA	Nuclear Criticality Safety Standards Bundle	2	$974.70	$1,949.40	0.00%	$0.00	$1,949.40	Web	Printed Edition	75.00%	$1,462.05	PDLC	Single
15.11-2016	Radiation Protection at Research Reactor Facilities	1	$164.00	$164.00	0.00%	$0.00	$164.00	Phone	Printed Edition	75.00%	$123.00	PDLC	Single
15.1-2007 (R2018)	The Development of Technical Specifications for Research Reactors	1	$105.00	$105.00	0.00%	$0.00	$105.00	Phone	Printed Edition	75.00%	$78.75	PDLC	Single
15.1-2007 (R2018)	The Development of Technical Specifications for Research Reactors	1	$94.50	$94.50	0.00%	$0.00	$94.50	Web	PDF	80.00%	$75.60	PODL	Single
15.1-2007 (R2018)	The Development of Technical Specifications for Research Reactors	1	$105.00	$105.00	0.00%	$0.00	$105.00	Web	PDF	80.00%	$84.00	PODL	Single
15.21-2012 (R2018)	Format and Content for Safety Analysis Reports for Research Reactors	1	$136.00	$136.00	0.00%	$0.00	$136.00	Phone	Printed Edition	75.00%	$102.00	PDLC	Single
15.4-2016	Selection and Training of Personnel for Research Reactors	1	$103.00	$103.00	0.00%	$0.00	$103.00	Phone	Printed Edition	75.00%	$77.25	PDLC	Single
15.8-1995 (R2018)	Quality Assurance Program Requirements for Research Reactors	1	$63.00	$63.00	0.00%	$0.00	$63.00	Web	PDF	80.00%	$50.40	PODL	Single
15.8-1995 (R2018)	Quality Assurance Program Requirements for Research Reactors	1	$70.00	$70.00	0.00%	$0.00	$70.00	Phone	Printed Edition	75.00%	$52.50	PDLC	Single
15.8-1995 (R2018)	Quality Assurance Program Requirements for Research Reactors	1	$91.00	$91.00	0.00%	$0.00	$91.00	Web	PLUS	80.00%	$72.80	PDLC	Single
15.8-1995 (R2018)	Quality Assurance Program Requirements for Research Reactors	3	$91.00	$91.00	0.00%	$0.00	$91.00	Web	PDF	80.00%	$72.80	PODL	MultiUser
15.8-1995 (R2018)	Quality Assurance Program Requirements for Research Reactors	1	$70.00	$70.00	0.00%	$0.00	$70.00	Web	PDF	80.00%	$56.00	PODL	Single
16.1-2019	Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure	1	$140.00	$140.00	0.00%	$0.00	$140.00	Phone	Printed Edition	75.00%	$105.00	PDLC	Single
16.1-2019	Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure	3	$236.60	$236.60	0.00%	$0.00	$236.60	Web	Redline and Base PDFs	80.00%	$189.28	PDLC	MultiUser
16.1-2019	Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure	1	$140.00	$140.00	0.00%	$0.00	$140.00	Web	PDF	80.00%	$112.00	PODL	Single
19.1-2019	Nuclear Data Sets for Reactor Design	1	$93.60	$93.60	0.00%	$0.00	$93.60	ANS Direct	Printed Edition	100.00%	$93.60	ANS	Single
19.6.1-2011 (R2016)	Reload Startup Physics Tests for Pressurized Water Reactors	1	$119.70	$119.70	0.00%	$0.00	$119.70	Web	PDF	80.00%	$95.76	PODL	Single
19.6.1-2011 (R2016)(W2019)	Reload Startup Physics Tests for Pressurized Water Reactors	1	$133.00	$133.00	0.00%	$0.00	$133.00	Web	PDF	80.00%	$106.40	PODL	Single
19.6.1-2011 (R2016)(W2019)	Reload Startup Physics Tests for Pressurized Water Reactors	1	$133.00	$133.00	0.00%	$0.00	$133.00	Web	PDF	80.00%	$106.40	PODL	Single
19.6.1-2019	Reload Startup Physics Tests for Pressurized Water Reactors	1	$124.20	$124.20	0.00%	$0.00	$124.20	Web	PDF	80.00%	$99.36	PODL	Single
2.17-2010 (R2016)	Evaluation of Subsurface Radionuclide Transport at Commercial Nuclear Power Plants	1	$152.00	$152.00	0.00%	$0.00	$152.00	Web	PDF	80.00%	$121.60	PODL	Single
2.26-2004 (R2017)	Categorization of Nuclear Facility Structures, Systems, and Components for Seismic Design	1	$131.00	$131.00	0.00%	$0.00	$131.00	Email-Service	Printed Edition	75.00%	$98.25	PDLC	Single
3.1-1993 (R1999)	Selection, Qualification, and Training of Personnel for Nuclear Power Plants	1	$86.40	$86.40	0.00%	$0.00	$86.40	Web	Secure PDF	80.00%	$69.12	PDLC	Single
3.1-2014 (R2020)	Selection, Qualification and Training of Personnel for Nuclear Power Plants	1	$141.00	$141.00	0.00%	$0.00	$141.00	Phone	Printed Edition	75.00%	$105.75	PDLC	Single
3.4-2013 (R2018)	Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants	1	$152.00	$152.00	0.00%	$0.00	$152.00	Web	PDF	80.00%	$121.60	PODL	Single
3.5-1998	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$121.00	$121.00	0.00%	$0.00	$121.00	Web	PDF	80.00%	$96.80	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	Printed Edition	75.00%	$102.75	PDLC	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	3	$178.10	$178.10	0.00%	$0.00	$178.10	Web	PDF	80.00%	$142.48	PODL	MultiUser
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$178.00	$178.00	0.00%	$0.00	$178.00	Web	PLUS	80.00%	$142.40	PDLC	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examinatior	1	$178.00	$178.00	0.00%	$0.00	$178.00	Web	PLUS	80.00%	$142.40	PDLC	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$178.00	$178.00	0.00%	$0.00	$178.00	Web	PLUS	80.00%	$142.40	PDLC	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	Redline and Base PDFs	80.00%	$109.60	PDLC	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examinatior	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	Printed Edition	75.00%	$102.75	PDLC	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	Printed Edition	75.00%	$102.75	PDLC	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examinatior	1	$137.00	$137.00	0.00%	$0.00	$137.00	Phone	Printed Edition	75.00%	$102.75	PDLC	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examination	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PDF	80.00%	$109.60	PODL	Single
3.5-2018	Nuclear Power Plant Simulators for Use in Operator Training and Examinatior	1	$178.00	$178.00	0.00%	$0.00	$178.00	Web	PLUS	80.00%	$142.40	PDLC	Single
3.8.6-1995	Criteria for the Conduct of Offsite Radiological Assessment for Emregency Response for Nuclear Power Plants	1	$70.00	$70.00	0.00%	$0.00	$70.00	Web	PDF	80.00%	$56.00	PODL	Single

ANS Direct ANS Techstreet Store Sales Report (Oct. 1, 2019 -- March 31, 2020)

3.8.7-1998	Criteria for Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness	1	$70.00	$70.00	0.00%	$0.00	$70.00	Web	PDF	80.00%	$56.00	PODL	Single
41.5-2012 (R2018)	Verification and Validation of Radiological Data for Use in Waste Management and Environmental Remediation	1	$177.00	$177.00	0.00%	$0.00	$177.00	Web	PDF	80.00%	$141.60	PODL	Single
5.10-1998 (R2019)	Airborne Release Fractions at Non-Reactor Nuclear Facilities	1	$130.50	$130.50	0.00%	$0.00	$130.50	Web	PDF	80.00%	$104.40	PODL	Single
5.1-2014 (R2019)	Decay Heat Power in Light Water Reactors	1	$239.00	$239.00	0.00%	$0.00	$239.00	Web	PLUS	80.00%	$191.20	PDLC	Single
5.1-2014 (R2019)	Decay Heat Power in Light Water Reactors	1	$165.60	$165.60	0.00%	$0.00	$165.60	Web	PDF	80.00%	$132.48	PODL	Single
51.1-1983 (R1988)	Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants	1	$231.00	$231.00	0.00%	$0.00	$231.00	Web	PDF	80.00%	$184.80	PODL	Single
55.4-1993 (R2007)(W2017)	Gaseous Radioactive Waste Processing Systems for Light Water Reactor Plants	1	$142.00	$142.00	0.00%	$0.00	$142.00	Web	PDF	80.00%	$113.60	PODL	Single
56.4-1983 (R1988)	Pressure and Temperature Transient Analysis for Light Water Reactor Containments	1	$152.00	$152.00	0.00%	$0.00	$152.00	Web	PDF	80.00%	$121.60	PODL	Single
57.9-1992 (R2000)	Design Criteria for an Independent Spent Fuel Storage Installation (Dry Type)	1	$193.00	$193.00	0.00%	$0.00	$193.00	Web	PDF	80.00%	$154.40	PODL	Single
58.14-2011 (R2017)	Safety and Pressure Integrity Classification Criteria for Light Water Reactors	1	$213.00	$213.00	0.00%	$0.00	$213.00	Web	PDF	80.00%	$170.40	PODL	Single
58.22-2014	Requirements for Low Power and Shutdown Probabilistic Risk Assessment - ANS/ASME-58.22-2014 (Trial Use Standard)	1	$440.00	$440.00	0.00%	$0.00	$440.00	Email-Service	PDF	80.00%	$352.00	PODL	Single
58.3-1992 (R2018)	Physical Protection for Nuclear Safety-Related Systems and Components	1	$152.00	$152.00	0.00%	$0.00	$152.00	Web	PDF	80.00%	$121.60	PODL	Single
58.8-2019	Time Response Criteria for Manual Actions at Nuclear Power Plants	1	$85.50	$85.50	0.00%	$0.00	$85.50	ANS Direct	Printed Edition	100.00%	$85.50	ANS	Single
58.9-1981(R2015)	Single Failure Criteria for Light Water Reactor Safety-Related Fluid Systems	1	$52.00	$52.00	0.00%	$0.00	$52.00	Web	PDF	80.00%	$41.60	PODL	Single
59.51-1997 (R2015)	Fuel-Oil Systems for Emergency Diesel Generators	1	$86.00	$86.00	0.00%	$0.00	$86.00	Web	PDF	80.00%	$68.80	PODL	Single
6.1.1-1991	Neutron and Gamma-Ray Fluence-to-Dose Factors	1	$112.00	$112.00	0.00%	$0.00	$112.00	Web	Printed Edition	75.00%	$84.00	PDLC	Single
6.1.2-2013 (R2018)	Group-Averaged Neutron and Gamma-Ray Cross Sections for Radiation Protection and Shielding Calculations for Nuclear Power Plants	1	$61.00	$61.00	0.00%	$0.00	$61.00	Web	PDF	80.00%	$48.80	PODL	Single
6.4.3-1991	Gamma-Ray Attenuation Coefficients and Buildup Factors for Engineering Materials	1	$256.00	$256.00	0.00%	$0.00	$256.00	Phone	PDF	80.00%	$204.80	PODL	Single
6.6.1-2015	Calculation and Measurement of Direct and Scattered Gamma Radiation from LWR Nuclear Power Plants	1	$158.00	$158.00	0.00%	$0.00	$158.00	Web	PDF	80.00%	$126.40	PODL	Single
8.10-2015 (R2020)	Criteria for Nuclear Criticality Safety Controls in Operations With Shielding and Confinement	1	$61.00	$61.00	0.00%	$0.00	$61.00	Web	PDF	80.00%	$48.80	PODL	Single
8.1-2014 (R2018)	Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	1	$137.00	$137.00	0.00%	$0.00	$137.00	Web	PLUS	80.00%	$109.60	PDLC	Single
8.1-2014 (R2018)	Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	1	$105.00	$105.00	0.00%	$0.00	$105.00	Web	PDF	80.00%	$84.00	PODL	Single
8.1-2014 (R2018)	Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	1	$94.50	$94.50	0.00%	$0.00	$94.50	Web	PDF	80.00%	$75.60	PODL	Single
8.1-2014 (R2018)	Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	1	$105.00	$105.00	0.00%	$0.00	$105.00	Web	PDF	80.00%	$84.00	PODL	Single
8.1-2014 (R2018)	Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	20	$105.00	$2,100.00	40.00%	$840.00	$1,260.00	ANS Direct	Printed Edition	100.00%	$1,260.00	ANS	Single
8.17-2004 (R2019)	Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors	1	$52.00	$52.00	0.00%	$0.00	$52.00	Web	PDF	80.00%	$41.60	PODL	Single
8.19-2014 (R2019)	Administrative Practice for Nuclear Criticality Safety	1	$50.40	$50.40	0.00%	$0.00	$50.40	Web	PDF	80.00%	$40.32	PODL	Single
8.19-2014 (R2019)	Administrative Practice for Nuclear Criticality Safety	20	$56.00	$1,120.00	40.00%	$448.00	$672.00	ANS Direct	Printed Edition	100.00%	$672.00	ANS	Single
8.23-2019	Nuclear Criticality Accident Emergency Planning and Response	1	$146.00	$146.00	0.00%	$0.00	$146.00	Phone	Printed Edition	75.00%	$109.50	PDLC	Single
8.23-2019	Nuclear Criticality Accident Emergency Planning and Response	1	$131.40	$131.40	0.00%	$0.00	$131.40	Web	PDF	80.00%	$105.12	PDLC	Single
RA-S-1.2-2014	Severe Accident Progression and Radiological Release (Level 2) PRA Standard for Nuclear Power Plant Applications for Light Water Reactors (LWRs) - ASME/ANS RA-S-1.2-2014 (Trial Use Standard)	1	$220.00	$220.00	0.00%	$0.00	$220.00	Web	PDF	80.00%	$176.00	PODL	Single
		123		**$15,398.40**		**$1,288.00**	**$14,110.40**						

Subtotal:		**$11,523.27**
Subscriptions:	**$**	**5,239.80**
Less 5% Bonus:	**$**	**-**
Total:	**$**	**16,763.07**

Current Associate Member List (5/20/2020)

	Name	Solicitation or Random	Date VF Rec'd	PLACEMENT	CC
1	Margaret Kurtts	Student Section Solicitation 2014	8/12/2014	30.2	RARCC
2	Matthew Hertel	Random	3/31/2015	59.3-No WGC 58.9-No WGC	LLWRCC
3	Theresa Cutler	Recruited by ANS-8.23 WGC/Baker	10/24/2015	8.10	NCSCC
4	Nima Fathi	YMG Solicitation 2015	5/13/17 placed on WG	10.4-No WGC WGC R. Jones	SRACC
5	Paul Romano	YMG Solicitation 2015	5/13/17 placed on WG	10.4-No WGC	SRACC
6	Enerel Munkhzul	YMG Solicitation 2015	1/15/2016	30.2	RARCC
7	Blaine Rice	Invited by J. Baker	10/1/2015	8.23	NCSCC
8	Ning Zhang	random	2014	8.1	NCSCC
9	Steven Thompson	random	6/20/16	19.10	SRACC
10	Amir Bahadori	random	5/27/2016	2.22 6.4.2	ESCC SRACC
11	Matthew Chapa	random	10/11/2016	8.19	NCSCC
12	Charles Cohen	NN	6/21/2019	19.6.1	SRACC
13	R. Patrick White	responded to N&D call out for volunteers for 30.3	7/21/2017	30.3	LLWRCC
14	Kelsey Amundson	random	6/30/2017	8.19	NCSCC
15	Vaibhav Yadav	YMG Solicitation 2017	10/4/2017	LPSD WG	JCNRM
16	Arielle Miller	submitted new VF after attending NCS Std Forum @ 2017 Winter Meeting	11/2/2017	'8.1	NCSCC
17	Travis Wilson	random	9/26/17 & resubmitted 12/20/2017 by M. Crouse	8.22 '8.7	NCSCC
18	Quentin Newell	random	1/23/2017	8.1 '8.12	NCSCC
19	Konner Casanova	random	9/21/2017	8.23	NCSCC
20	Jennifer Lyons	random	5/1/2018	8.19	NCSCC
21	Brandon Chisholm	Random	8/20/2018	20.2	RARCC
22	Hannah Morbach	Random	9/7/2018	8.3	NCSCC
23	Joshua Kane Halsted	2018 Student Broadcast	9/28/2018	15.22	RARCC
24	Jason M. Crye, PhD	Suggestion from D. Bowen	9/5/2018	8.10	NCSCC
25	Kristina Spencer, PhD	Suggested during course at UofNM	9/21/2018	8.17	NCSCC
26	Shawn Henderson	randon	11/19/2018	8.24	NCSCC
27	Erik Slobe	random	1/4/2019	60.1	LLWRCC
28	William ("Will")John Zywiec	random	1/24/2019	8.3	NCSCC
29	Showq Ali Y Sama	Saw on our website	5/2/2019	57.9	FWDCC
30	Gary Ly	J. Miller/SNL recommended	3/28/2019	8.19	NCSCC
31	Izabela Gutowska, PhD	saw notice in NN	5/20/2019	53.1	RARCC
32	Andrew Arend	random	6/17/2019	8.1	NCSCC
33	Austin McGee	random	11/15/2017	8.17	NCSCC

Current Associate Member List (5/20/2020)

	Name	Solicitation or Random	Date VF Rec'd	PLACEMENT	CC
34	Giulio Malinverno	random	7/13/2019	10.4-No WGC	SRACC
35	Michelle Evans	Responsd to NE local sec. chair email	7/17/2019	2.3	ESCC
36	Joshua Butler	Heard about program from co-worker, Tracy Stover.	8/12/2019	ANS-8.14	NCSCC
37	William T. Gerding	Talked directly to 8.7 WGC and then submitted VF	9/4/2019	ANS-8.7	NCSCC
38	Michael Fendler	random	9/24/2019	ANS-8.22	NCSCC
39	Vikram (Vik) Singh	referred by associate	10/16/2019	ANS-20.2	RARCC
40	Chelsea Gunter	Feb 2017 NSN Brief	2/16/2017	57.11	NRNFCC
41	Lorenzo Vergari	reccommended by R. Scarlati	3/25/2020	ANS-20.2	RARCC
42	Gabriel Grant	resp to NN ad for 57.1	8/12/2019	ANS-57.9	FWDCC
43	James Busen	solicited by 8.21 WGC D. Erickson for 8.21	12/9/2019	ANS-8.21	NCSCC
44	Ashkhen Nalbandyan	Responded to email from J. Kutsch, 20.2 Secretary	12/20/2020	ANS-20.2	ESCC
45	Fan Zhang	Recruited by 3.15 WGC M. Muhleim	2/18/2020	ANS-3.15	LLWRCC
46	Joseph Chaudhari	website	3/25/2020	ANS-56.2	LLWRCC
47	Kurt Harris	NSN	4/20/2020	ANS-57.9	FWDCC

Upgraded Associate Member List (5/20/2020)

	Name	Solicitation or Random	Date VF Rec'd	PLACEMENT	CC	Upgrade Date
1	Mihai Diaconeasa	Random	5/7/2014	30.1 2.34	RARCC ESCC	3/19/2019
2	Shilp Vasavada	NAYGM 2015 solicitation	11/18/2015	3.13 2.26	LLWRCC ESCC	1/22/2019
3	Kaushik Banerjee	YMG Solicitation 2015	11/20/2015	19.6.1	SRACC	5/11/2019
4	Tracy Stover	Random	11/3/2015	8.12	NCSCC	6/15/2017
5	Evan Beese	YMG Solicitation 2015	11/1/2015	15.1	RARCC	5/12/2019
6	Scott Finfrock	Invited by L. Wetzel to join 8.24 as assoc member; 6-2015.			NCSCC	8/9/2018
7	Brandon O'Donnell	Invited by J. Baker	10/1/2015	8.23	NCSCC	6/15/2017
8	Cheri Paugh	random	11/2/2017	58.2	LLWRCC	7/24/2018
9	Joshua Marshall	random	6/29/2016	8.1	NCSCC	5/7/2019
10	Katherine McCurry (Steddenbenz)	random	12/20/2017	8.12	NCSCC	5/31/2019
11	Jeremy Gustafson	YMG 2015 Solicitation	11/1/2015	ANS-56.8	LLWRCC	9/26/2019
12	Dallas Moser	recommended by K. Wessels	12/3/2019	ANS-8.1	NCSCC	3/25/2020
13	Dong (Allen) Wang	random	7/1/2014	3.5.1	LLWRCC	5/20/2020

The following associate members participate on more than one WG and have been upgraded on one or more WGs but remain listed on the list of current AsMs.

Kurt Harris upgraded on ANS-20.2; AsM on ANS-57.9.
Kelsey Amundson upgraded on ANS-8.20 & ANS-8.26; AsM on ANS-8.19.
Arielle Miller upgraded on ANS-8.12 & ANS-57.11; AsM on ANS-8.1.
Theresa Cutler upgraded on ANS-8.1, ANS-8.3, ANS-8.20, ANS-8.23 & ANS-8.26; AsM on ANS-8.10.
Ning Zhang ugraded on ANS-8.15; AsM on ANS-8.1.
Konner Casanova upgraded on ANS-8.3; AsM on Ans-8.23.
Chelsea Gunter added as full member on Ans-60.1; AsM on ANS-57.11

Resigned/Lost Associate Member List (Updated 5/20/20)

	Name	Solicitation or Random	Date VF Rec'd	PLACEMENT	CC
1	Chelsea Sutton (Maiden Name: Weaver)	Not sure but on 8.3 since 2014	1/2014	8.3	NCSCC
2	Chelsea Collins	Student Section Solicitation 2014	8/13/2014	8.3	NCSCC
3	Joseph (Joe) Kopacz	Student Section Solicitation 2014	8/12/2014	3.13	LLWRCC
4	Cailyn Ludwig	Student Section Solicitation 2014	8/12/2014	3.14	NRNFCC
5	Benjamin (Ben) Prewitt	Student Section Solicitation 2014	8/12/2014	20.1	RARCC
6	Manit Shah	Student Section Solicitation 2014	8/12/2014	6.4.3, (past AsM of 57.2 & 57.3)	SRACC
7	Manish Sharma	Student Section Solicitation 2014	8/12/2014	6.4.3	SRACC
8	Gregory Suehr	Student Section Solicitation 2014	8/12/2014	57.2/52.73	FWDCC
9	Mara Watson	Student Section Solicitation 2014	8/12/2014	ESCC	ESCC
10	Tim Stout	Random	8/27/2014	ANS-58.9	LLWRCC
11	Christopher Courtenay	YMG Solicitation 2015	11/2015	ANS-2.25	ESCC
12	Philip Jensen	YMG Solicitation 2015	11/2/2015	ANS-3.14	NRNFCC
13	Siddharth Suman	YMG Solicitation 2015	11/11/2015	ANS-8.20	NCSCC
14	Matthew Lynch	YMG Solicitation 2015	11/1/2015	8.1	NCSCC
15	Bristol Hartlage	YMG Solicitation 2015	11/1/2015	3.15	LLWRCC
16	Umer Shahid	saw notice in NN	6/12/2018	57.8	FWDCC
17	Stanley Tackett	Student Section Solicitation 2014	8/12/2014	6.4.2	SRACC
18	Dylan Robideaus	Random	2/5/2014	8.7	NCSCC
19	Timothy Crook	random	6/8/2017	ANS-20.2	RARCC

ATTACHMENT 4

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

A SMART strategic plan consists of goals that are **S**trategic, **M**easurable, **A**ttainable, **R**ealistic and **T**ime-related. This matrix takes each of the Initiatives in the ANS SB Strategic Plan and defines the specific activities that need to be done for each Goal and Objective along with its proposed schedule and responsibility. This is a living document. Updates and comments from Standards Board Members will be solicited and the plan adjusted.

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
Completed	Near Term	Overdue			
Goal #1 Align Standards Development Priories with Current and Emerging Needs					
A. Evaluate the results of the initial industry priority survey	Standards Mgr	Executive summary issued.		1/2016	1/2016
B. Assign responsibilities to the appropriate consensus committees to address the top ten survey identified high priority standards	Standards Mgr	Issue list of high priority standards with assigned responsibilities. List discussed during 2/12/2016 conference call and published in minutes.		2/29/2016	2/29/2016
C. Develop and implement an approach to collect industry priority needs on an ongoing basis and integrate them into standards committee priorities.	Chair External Communications TG	ANS SC Policy drafted to specify this approach and approved by SB.	1/25/17: With no External TG Chair, there has been no action	2/1/2017	
D. Incorporate risk-informed and performance-based methods in ANS standards, where appropriate, by:					
1. RP3C Chair	Manage the resolution of comments and send resulting Draft Plan to Standards Manager for issuance for use on two pilot standards.	Jim O'Brien to lead effort	~~12/1/2017~~ 12/31/2018	6/2019	8/31/2018
	RP3C Chair	Provide draft ANS Risk Informed and Performance Based Standards Plan (which will provide the approaches and procedures to be used by ANS SC consensus committees, subcommittees and working groups to implement risk informed and performance based principles in a consistent manner) for review & comment prior to use in pilot applications	Jim O'Brien to lead effort; underway, should be complete by Dec 31, 2018. Balloted issued in April 2019. for proposed issue as draft for trial use	~~9/30/2017~~ ~~9/30/2018~~ ~~12/31/2018~~ 6/1/2019	6/1/2019

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
	RP3C Chair	Incorporate approaches used from the application of RP3C Guidance being applied on current standards under development into a trial use Guidance Document for SB approval.	Piloted on ANS-2.26, ANS-2.3, and ANS-2.21. The piloting is ongoing because each of these standards is currently being worked on.		6/11/2019
		Collect comments and recommendations from WG's using the trial use Guidance Document and send to Standards Manager for SB ballot.	Jim O'Brien to lead effort	6/1/2020	
	RP3C Chair	Manage the resolution of comments and send resulting document to Standards Manager for issuance as a policy or procedure.	Jim O'Brien to lead effort	?????	
2. Develop a Risk-Informed Performance-Based Principles training package for training of ANS Standards Committee members.	RP3C Chair	Develop Risk-Informed and Performance-Based Training Package for SC members and provide to SB for review.	Ed Wallace to lead. To be developed in parallel with procedure finalization	~~12/1/2017~~ ~~1/31/2019~~ 3/13/2020	
3. Conduct training of consensus committees and working groups.	CC Chairs	Schedule training for CC/WGs as needed, supported by RP3C training resources. CCs and RP3C to coordinate.	Ed Wallace to lead.	~~3/31/2019~~ 4/13/2020	
	RP3C Chair	Conduct Training for all applicable CCs.	??? to lead	~~6/30/2019~~ ????	
4. The RP3C will work with each consensus committee to develop a prioritized list and schedule for incorporating risk-informed and performance-based principles into its standards. Collaboratively, they will Identify and define any new standards that are related to risk-informed and performance-based principles. Some of such work may already have been assigned to other standards working groups, and so it is important to work with the SB and CCs to identify an appropriate WG lead (and CC) for the standards development with the objective of avoiding duplication.	RP3C Chair CC Chairs	Review ANS standards and narrow the list to 23 potential RP3C standards "Initial Priority List" and send to applicable. CCs review the list and provide their inputs on applicability and schedule for each of the 23 standards.	Completed. Link to spreadsheet with CC evaluations and schedules—ACCESS HERE	9/30/2017	8/20/2018

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
	CC Chairs	*Requested CCs review and confirmation of actions on Phase 1 list of potential RIPB standards and RP3C feedback on insights*	CC Response status: ESCC – 3/22/18 FWDCC – Input provided pending LLWRCC – partial information provided 1/22/18; full details remain pending NCSCC – responded N/A 1/30/18 as no NCSCC standards are on the short list. NRNFCC – N/A standards part of RP3C pilot program RARCC – 7/9/18 SRACC – confirmed N/A 1/30/18 as no SRACC standards are on the short list.	9/30/2018	11/20/2018
	RP3C Chair	Manage joint discussions of the actions and schedule for the Initial Priority List of approaches and schedule and provide the results to the Standards Board for discussion at a Standards Board meeting. Mange any required interfaces with CCs and WGs. WGs and CC Management are to give this effort priority.	Agreed approaches and schedules with CC chairs to be incorporated into spreadsheet (ACCESS HERE).	4/30/2019	
5. Publishing a Nuclear News Article to inform other members of the Society of the benefits of this risk-informed and performance-based effort	RP3C Chair	*Nuclear News* (*NN*) article drafted, approved by SB Chair, and forwarded to *NN* editor. Via Standards Manager	The article has been completed. Postponed until next issue due to staff transition at NN.	~~11/1/2017~~ 12/31/2018 Article submitted, publication pending	5/1/2019
6. Developing presentation materials that can be used to inform other industry groups as to the benefits and use of the ANS Standards	RP3C Chair	Develop presentation package for use with other industry groups and submit to SB for approval.	To be developed in parallel with plan finalization	3/1/2019	

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
Committee risk-informed and performance based standards activities	RP3C Chair	Contact appropriate organizations to make presentations at NRC RIC, ANS UWC, and owners' groups.		~~7/1/2018~~ 4/30/2019	
	RP3C Chair	Make presentations at a minimum of 2 groups.		5/31/2019	
Goal #2: Develop and Maintain High Quality Standards					
A. Enhance the relationships with the ANS Professional Divisions and Technical Groups to assist in populating WGs with expert individuals. (also supports Goal 5)	Internal Communications TG Manager	Issue interface liaisons table between applicable divisions and group and the standards consensus committees.		8/1/2016	6/1/2016
	CC Chairs	Send requests for staffing assistance to ANS Professional Divisions and Technical Groups as needed.	11/2017: ESCC – Done FWDCC - Done LLWRCC - Done NCSCC - Done NRNFCC - Done RARCC - None identified SRACC - Done	Initial requests sent prior to Oct. 2017 meeting. Ongoing	11/1/2017
	Internal Communications TG Manager	Tabulate the summary of the requests made and the results and present to SB.	This item has been replaced by having the CC Chair report the results in their SB reports	NA	
B. Develop and Implement a standards training program for all Standards Committee members to ensure that standards development is consistent with current policies and procedures, thus, producing consistently better quality products in a timelier manner.	Internal Communications TG Manager	Develop initial presentations and post on Workspace.		3/1/2016	3/1/2016
	SB VChair	Assign training instructors.		3/1/2016	3/1/2016
	SB VChair	Prepare training plan.		2/1/2016	2/1/2016
	Standards Mgr	Send out training notices.		3/15/2016	3/15/2016
	Standards Mgr	Complete the initial rounds of training presentations.		6/2/2016	6/2/2016

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
	SB VChair	Select videos for use in future training presentations.		6/2/2016	6/2/2016
C. Assign a mentor to each new standards working group that is experienced in the use of ANS standard's procedures, policies, glossary and tool kit	CC Chair	Evaluate SubC Chairs for familiarity with toolkit/standards development.	11/2017: ESCC – Done FWDCC - Done LLWRCC - Done NCSCC - Done NRNFCC - Done RARCC- Done SRACC - Done	5/1/17	5/31/2018
	CC Chair	Select SubC Chairs and other CC members with respect to their being well versed in toolkit contents and capable of being mentors. Provide mentor list to SB VChair.	11/2017: ESCC – Done FWDCC - Done LLWRCC - Done NCSCC - Done NRNFCC - Done RARCC - Done SRACC - Done	5/1/17	6/12/2018
	CC Chair	In cases where additional assistance is required beyond the SubC Chair, CC should request mentor from SB VChair.	None identified yet	Chairs have been advised.	11/1/2017
Goal #3: Improve Standards Development Production and Efficiency					
A. Expedite development of high-priority standards by improving Standards Board and consensus committee oversight using achievable project plans and definitive schedules with assigned milestones throughout the standards development cycle.	SB VChair	Draft project plan development policy.		10/1/2016	Approved by SB 9/6/16. Project plan w/b added to CC procedures as Appendix K.
	SB VChair	Draft project plan development policy.		10/1/2016	Approved by SB 9/6/16. Project plan

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
					w/b added to CC procedures as Appendix K.
	CC Chairs	Develop project plans for 6 total standards from all CCs and submit to consensus committees. This is the total goal for all CCs not 6 by each CC.	6 plans completed: 2.22,2.27, 54.1, 2.25, 2.29, 3.13 and the JCNRM milestone schedule	6/12/2018	Approved by SB 9/6/16. Project plan w/b added to CC procedures as Appendix K.
B. Complete the Standards Volunteer Database to facilitate recruiting personnel for Standards Committee activities (also supports Goal #5	ANS IT Dept.	ANS IT complete ANS SC Volunteer Database in accordance with the SB specification.	It will now not be able to start any work on the volunteer database until the redesign is completed which is planned for 1st quarter 2020. .	~~11/1/2017~~ ~~11/17/2018~~ ~~6/20/2019~~ ~~6/5/2020~~ ???	
	SB/ ANS IT Dept.	SB approves database submitted by ANS IT department.		~~2/1/2018~~ ~~2/1/2019~~ ~~9/20/2019~~ 9/30/2020	

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
C. Assist the consensus committees in obtaining required human resources using outreach initiatives	Standards Mgr	Develop staffing approach guideline and post to website toolkit.		12/1/2016	Completed by S. Stamm and posted to the toolkit on 8/22/16 here.
D. Maximize use of the ANS Standards Workspace and other communications vehicles to eliminate the need for travel and face-to-face meetings to the maximum extent possible	CC Chairs	Encourage WGs and SubCs to use Workspace and other online and electronic tools to eliminate face-to-face meetings	Procedure issued. CCs have discussed with SubC /Chairs	Done	April 2017
	CC Chairs	CC chairs to submit a confirmation email that this has been discussed with SubCs and WGs.	11/2017: ESCC – Done FWDCC – Done LL\WRCC – Done NCSCC – Done NRNFCC – Done RARCC – Done SRACC –- Done	5/1/2017	
E. Acquire funding (e.g., grants) to support the development of high-priority standards on an expedited basis.	CC Chairs/ Priority TG Chair	High priority standards list submitted by all CCs which identify high priority standards planned for near future. Priorities should be based on expected government and industry need.	11/2017: ESCC – ANS-2.8; ANS 2.26 (12/31/17) FWDCC -– ?? LWRCC –- ?? NCSCC -– None NRNFCC – None RARCC – ~~ANS~~, 20.2, 30.1 and 30.2 SRACC – None JCNRM – Done	Ongoing Cyber Security	
	SB VChair	Work with CCs to assess each effort, select most appropriate standards, prepare and submit proposals. Submit 1st proposal.	Nov 2017- Agreed to proactively coordinate with NRC and DOE for early identification of potential opportunities.	6/1/2017 Ongoing	
F. Streamline the reaffirmation process to reduce the number of delinquent standards by	Standards Mgr	Submit Reaffirmation Forms to WG/SubC Chairs for all standards approaching the 4-year mark.		Ongoing Starting 4/1/2016	Ongoing

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
establishing a systematic review of delinquent standards to start no later than the 4-year mark. This can be accomplished through the following mechanisms: 1. Automatically sending out a Reaffirmation Form to the WG chair with copies to subcommittee chair and consensus committee chair 2. Automate subcommittee and consensus committee approvals of reaffirmation, withdrawal, and revision recommendations 3. Establishing an ANS Professional Division and Technical Group sponsorship program to aid in review of associated delinquent standards with and without active working groups					
	Standards Mgr	Issue list of all standards over 4 year since issuance showing the issuance of Reaffirmation Forms to the WG chairs.		11/1/2016	Ongoing
	Standards Mgr	Action items for reaffirmation setup in Workspace with automatic reminders.		11/1/2016	The report was sent 9/15/16 and will be updated and resent 12/15/16
	Internal Communications Group Manager	Send list of delinquent standards to PDs.		12/1/2016	Completed
	Internal Communications Group Manager	Issue plan and approach to each Professional Division and Technical Group as applicable and obtain indication of acceptance.	COMPLETE	5/1/2017	11/2017
G. Develop subcommittee/consensus committee metrics to identify opportunities for improvements	Policy TG Chair	Identify CC metrics, review with CC Chairs.		10/1/2016	Changed to done!
	CC Chairs	Each CC fill in annual tabulated metric performance.	COMPLETE	5/1/2017	4/1/2017
	Policy TG Chair	Evaluate metric results.		3/1/2018	2/26/1/2018
	CC Chair & Policy TG Chair	Provide recommendations for changes to improve performance.	11/2017: ESCC – None FWDCC – ?? LL\WRCC – ?? NCSCC – ?? NRNFCC – ?? RARCC – ?? SRACC –- ??	6/1/2018	

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
Goal #4: Expand ANS Awareness and External Outreach					
A. Use periodic survey methods to gain feedback from industry, federal and state agencies; provide feedback to survey responders	SB VChair	Submit draft of survey comment responses to SB Chair for approval.		8/1/2016	7/26/16
	SB Chair	Send responses to commenters.		10/1/2016	Done
	SB Chair	Determine survey frequency for future ANS and industry surveys. (Work with NEI on developing recommendations)	1/25/17: Members recognized that the EC TG Chair position was open and no action has been taken.	2/28/2020	
B. Establish periodic leadership meetings with regulatory agencies, owner's groups and industry executives to align needs, and build support for development and greater use	Chair External Communications TG	Discuss communications approach with each of the applicable organizations (industry, federal. and state agencies). Setup regular schedule for discussions.		11/1/2018	
	Chair External Communications TG	Develop and issue master SC external communications plan.		5/1/2017	
C. Establish an ANS Professional Division sponsorship program to broaden input in setting standards priority	Chair Internal Communications TG	Issue plan and approach to each Professional Division and Technical Group as applicable and obtain indication of acceptance.	"Plan" was provided to liaisons. Confirmation pending	10/1/2016	6/2017
D. Seek liaison arrangements with relevant SDOs, where needed, to improve efficiency, effectiveness and consistency of standards across the industry where overlapping or interlocutory standards arise	Chair External Communications TG	Prepare a liaison list identifying each desired liaison interface, the liaison approach, and the implementation status.	1/25/17: Members recognized that the EC TG Chair position was open and no action has been taken.	10/1/2016	3/1/2017
	Chair External Communications TG	Implement all liaisons on the Liaison Interface List.	1/25/17: Members recognized that the EC TG Chair position was open and no action has been taken	10/1/2016	11/2017
E. Establish an approach to keep industry and trade groups advised of approved standards and in-progress standards in their areas of interest	Chair External Communications TG	Issue an Industry and Trade Group Interface Plan.	1/25/17: Members recognized that the EC TG Chair position was open and no action has been taken.	10/1/2016	
	Chair External	Complete interface plan implementation.		6/1/2018	

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
	Communications TG				
F. Identify key international organizations that can contribute to specific ANS standards development projects, including work group participation, review of draft standards, and providing input into standards prioritization.	Chair External Communications TG	Develop listing of key international organization, key contacts, and the desired interfaces we would like to develop.		6/1/2017	
	Chair External Communications TG	Send invitation letter to each of the interface contacts. Follow-up as needed		10/1/2017	
	Chair External Communications TG	Provide completion report to SB.		10/1/2018	
G. Establish a standards educational program for non-Standards Committee members to increase their knowledge of: 1. what consensus standards are, and are not; 2. benefit of consensus standards to the industry; 3. advantages to companies, federal and state agencies, and individuals of supporting standards development	Chair External Communications TG	Develop presentation package.		6/1/2016	6/1/2016
	Chair External Communications TG	Develop invitation list for indoctrination sessions.		8/1/2016	All ANS members
	Chair External Communications TG	Send indoctrination session invitations.		10/1/2016	sent via Jan 2017 N&D, member blast, and ANS home page.
	Chair External Communications TG	Conduct 1st indoctrination session.		2/1/2017	1/31/2017
	Chair External Communications TG	Complete sessions.		11/1/2017	
H. Contact leading nuclear companies to determine if they issue regular newsletters and offer to provide standards updates for inclusion.	Chair External Communications TG	Develop list of companies and contacts.	1/25/17: Members recognized that the EC TG Chair position was open and no action has been taken.	11/1/2016	
	Chair External Communications TG	Develop short form newsletter.	1/25/17: Members recognized that the EC TG Chair position was open and no action has	11/1/2016	

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
			been taken.		
	Chair External Communications TG	Make contact with 30% and report to SB.	1/25/17: Members recognized that the EC TG Chair position was open and no action has been taken.	4/1/2017	
	Chair External Communications TG	Make contact with 100% and report to SB.		11/1/2017	
I. Evaluate the cost effectiveness of a fee based training program for newly issued/ revised standards.	SB VChair	Prepare draft evaluation plan.		8/1/2016	7/26/2106
	SB VChair	Meet with ANS Membership & Marketing Director and revise plan as appropriate.		8/3/2016	Several calls held; last one on 10/5/16.
	SB VChair	Complete evaluation and send report to SB Chair for discussion with BOD.		3/1/2017	Completed Jan 2017 – Recommended ANS-2.8 & ANS-3.5 once approved.
	Standards Mgr	Send owners' groups semi-annual updates on applicable standards activities	Industry newsletter created and provided to Jim Riley as POC for utilities on 10/18/16. Industry newsletter posted here.	Ongoing	
Goal #5: Improve Industry Representation and Sustainability of Working Groups, Subcommittees, and Consensus Committees					
A. Approach owners' groups and industry organizations soliciting member participation in ANS standards	Standards Mgr	Send owners' groups semi-annual updates on applicable standards activities	Industry newsletter created and provided to Jim Riley as POC for utilities on 10/18/16. Industry newsletter posted here.	Ongoing	
	Standards Mgr	Request staffing assistance for select standards.	An updated list of volunteer needs was prepared and posted to the ANS website 8-11/16,	Ongoing	

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
			announced in Sept. 2016 N&D and distributed through ANS Collaborate to PDs.		
B. Send notices to ANS Student Section members, Young Member Group, Professional Division members, and North American-Young Generation Nuclear members to provide opportunities to participate in ANS standards	Standards Mgr	Send notices biannually.	Broadcast sent to ANS Student Section 9/15/16.	Ongoing Biannually	
		(See Goal #1)			
C. Enhance the relationships with the ANS Professional Divisions and Technical Groups to assist in populating WGs with expert individuals.(See Goal #1)	Standards Mgr	Advertise upcoming standards efforts with requests for support using *Nuclear News*, Nuclear Café, and ANS Linked-In Group.	Volunteer needs section added to *Nuclear News*. List of volunteer needs updated and posted to web and announced in N&D.	Ongoing	Standards Mgr
D. Advertise upcoming standards efforts with requests for support using Nuclear News, Nuclear Café, and ANS Linked-In Group		See goal # 3			
E. ANS IT Department to complete the Standards Volunteer Database, and make it available to subcommittee and consensus committee chairs (See Goal #3)	SB VChair	Develop standard report and provide to CC Chairs.	1/25/17: Stamm confirmed that this action will be completed shortly.	6/11/17	6/11/17
F. Monitor consensus committee and working group success in staffing and recruitment and share best practices across all consensus committees	CC Chairs	Changed to annual report based on performance data provided to the CC Chairs.		6/30/2018+ Ongoing	
	SB VChair	Evaluate results of CC reports at SB meeting	LLWRCC evaluating survey resultas. Report ot SB to be provided	6/30/2018+ Ongoing	

ATTACHMENT 5

2019/2018* All CC Performance Metrics Summary

Strategic Plan Activity 3.G

Performance Metric	Good (Green)	Fair (Yellow)	Poor (Red)	ESCC	FWDCC	LLWRCC	NCSCC	NRNFCC	RARCC	SRACC
CC Meeting Attendance (Calendar year)*	>75%	55% to 74%	<55%	79% 1 physical meeting & 2 calls (64.3%)	78.4% 2 physical meetings (81.8%)	58.3% 1 physical meeting & 3 calls (58.8%)	75% 1 meeting & 1 call 77.1%)	58.4% 1 meeting & 2 calls (56.3%)	53.3% 1 meeting (75%)	35.7% 1 meeting (57.1%)
Average CC member ballot participation	>90%	80% to 90%	<80%	83.9% (88.6%)	67.4% (86.4%)	70.4% (81.6%)	83.5% (90.0%)	68.3% (64.8%)	83.2% (87.5%)	77.9% (77.8%)
Number of new active standards initiated (% increase in assigned standards)	>5%	2% to 5%	<2%	6.7% (7.7%)	0% (0%)	8.3% (7.7%)	0% (0%)	0% (0%)	0% (0%)	0% (4.8%)
Number of standards greater than 8 years since last issuance	0%	0.1% to 5%	>5%	0% (0%)	0% (0%)	0% (7.7%)	0% (0%)	0% (0%)	0% (0%)	5.2% (0%)
Average time to staff WGs and draft new standards	<24 months	24 to 36 months	> 36 months	NA (16 months)	NA (NA)	NA (NA)	NA (NA)	5.75 years (NA)	NA (+8 years)	NA (NA)
Average ballot comment resolution time <50 pgs/ <50 cmts (L1) 50 to 100 pgs/ <100 cmts (L2) >100 pgs/ >100 cmts (L3)	< 4 wks <6 wks <8wks	4 to 6 wks 6 to 8 wks 8 to 12 wks	>6 wks >8 wks > 12 wks	2.5 weeks (9 weeks)	NA (NA)	22 weeks (+30 months)	+8 weeks/L1 (8 months)	NA (NA)	NA (+9 months)	5.5 days (NA)
Average time to respond to an inquiry	< 4 months	4 to 8 months	>8 months	NA (NA)	NA (NA)	NA (6.5 months)	4.5 months (11 months)	NA (NA)	NA (NA)	NA (NA)

*2018 metric provided in parentheses for reference.

ATTACHMENT 6

ANS Standards Board Meeting

June 9, 2020

ANS-30.1 Proposed Standard

- On March 5, 2020, a preliminary review ballot of ANS-30.1, “Integrating Risk and Performance Objectives into New Reactor Safety Designs,” was issued to the RARCC (only) for comment
- This comment ballot was requested by the SB
- The ballot was closed April 17, 2020. The results were
  - Affirmative were 10
  - Negative were 2
  - Abstentions were 1
- R3PC comments were previously provided and were considered as companion to this ballot

ANS-30.1 Proposed Standard

- Verbal remarks were obtained from JCNRM
- Outcome
  - Approximately 116 comments were derived from the feedback provided
  - Ranged from approval without comment to this standard has no purpose, could be detrimental to ongoing design efforts, and should not be published

ANS-30.1 Proposed Standard

- RARCC chair directed the following
  - Parse the feedback into two categories
    - The first for comments that have a technical basis within the existing text and may be resolvable
    - The second for comments that are of a philosophical nature and likely are not resolvable within the existing text
  - The second category is to be presented to the Standards Board for discussion and determination of a path forward

ANS-30.1 Proposed Standard

- Results
  - Probable resolution – 49
  - Maybe resolution – 41
  - No resolution – 25
  - No comment – 8
- One side
  - One of the better written ANS standards I can remember reviewing
- Other side
  - This standard conflicts with similar efforts and should not be pursued at this time

ANS-30.1 Proposed Standard

- Breakdown of No Resolution comments
  - Inappropriate to mix requirements for safety and non-safety. Should address in separate standards – 5
  - Creates conflicts, inconsistencies, disagreements, differences, and contradictions with NEI-18-04 – 8
  - NRC endorsement is problematic for designers – 1
  - Other end uses of document should be considered in lieu of as a standard – 3
  - ANS-30.1 endorsed a single design process via SE requirement – 2
  - Considering nuclear and non-nuclear risks in same standard causes confusion with respect to NEI 18-04 DID – 4
  - Content varies from scope and purpose – 2

ANS-30.1 Proposed Standard

- Paths forward for discussion
  - Drop continued development
  - Continue on current path toward a standard with resolution of comments
  - Change to a guidance document
- The path of For Trial Use Only just delays dealing with fundamental objections

ATTACHMENT 7

American Nuclear Society

ANS Standards – Hierarchy of Governing Documents

1. ANS Bylaws, Rules, and Procedures (not audited by ANSI)
2. ANSI Essential Requirements: Due process requirements for American National Standards*
3. **ANS Standards Committee Rules and Procedures (accredited by ANSI)**
4. Policy Manual for the ANS SC**
5. ANS SC Procedures for CCs (covered in Part 2)**
6. ANS Style Manual (in development)
7. ANS Standards Toolkit (covered in Part 2)

**Reflected in ANS SC Rules and Procedures*

***Not part of ANS SC Rules and Procedures*

American Nuclear Society

Bases for Key Procedure Types

- **ANS SC Rules and Procedures** – Agreement between ANS SC and ANSI on high level ANS procedural requirements for ANSI compliance.
  - Audited by ANSI; Changes require ANSI approval
  - Violations = ANSI concerns
  - It is our contract between the ANS Standards Committee and ANSI.
  - Standards Board has limited the Rules and procedures to the highest level that will satisfy ANSI
  - The details of how these criteria will be met are covered in the lower level standards policies and procedures.
- **Policies**- Documents that apply to the entire standards committee (SB approved)
  - Non-compliance is issue between CC and SB
- **ANS SC Procedures for CCs** - Procedures that apply to one or more consensus committees (SB Approved)
  - Lower level than Policy Manual
  - Non-compliance is to be identified to the SB by the effected CC.

ANS SC Rules and Procedures – Contents

- Scope
- Organization
- Membership
- Officers
- Conduct of Business
- Appeals
- Revisions to Rules
- Annexes
  - A Definitions of Interest Groups
  - B Classification of SC Members
  - C Records Retention
  - D Compliance with Normative ANSI Policy

American Nuclear Society

Proposed Change to Rules & Procedures Appeal Process

- ~60% of changes are wording preferences that do not change the meaning of the current procedure.
- Changes of concern in the ANSI approved document
  - Words that amplify the effort to be expended: *"…**all** reasonable attempts"*
  - Changes that add required documentation that will be needed to document the completion of specific requirement beyond those required by ANSI e.g.: *"Resolution Plan of Action"*
  - Specific time requirements that are not specified by ANSI as required
  - Assignment of actions to specific individuals rather than assignment of responsibilities
  - Requirements for action by individuals which may net be part of the Standards Committee. i.e. *Requiring Appealers to participate in development of the Resolution Plan of Action.*
  - Require a standards committee member to do something outside their area of responsibility*." ..(SB Chair) shall review the substance and if necessary intervene with a resolution concerning the substance,"*

ATTACHMENT 8

ANS Standards Committee Rules and Procedures
Section 6 - ANS Standards Committee Appeals Procedure
For SB Approval

6. APPEALS

6.1 An appeal regarding the conduct of or incompleteness of any procedure called for under Section 5 of these Rules and Procedures may be made at any time. However, all ~~R~~reasonable attempts shall be made by the Working Group Chair to informally resolve a possible~~n~~ ~~–~~appeal ~~informally before going through~~entering ~~this~~a formal process.

6.2 Should the informal process not lead to a resolution of the concern, a~~A~~ formal~~n~~ appeal shall be submitted, in writing, to the secretary of the SB stating its~~the~~ explicit reason ~~for the appeal~~ and at what point(s) in the process the ~~person making the~~ appeal~~er~~ is not satisfied.

~~6.1~~6.3 Upon receipt of the formal appeal, t~~T~~he SB C~~c~~hair ~~of the SB~~ shall determine whether ~~the appeal~~it is procedural or technical in nature. ~~Reasonable attempts shall be made to resolve an appeal informally before going through a formal process.~~

6.3.1 If the appeal is procedural, the responsible consensus committee chair shall be advised. ~~The consensus committee chair~~and~~,~~ in consultation with the responsible subcommittee chair, ~~shall~~ develop a Resolution P~~p~~lan of A~~a~~ction ~~to resolve the appeal.~~ in consultation with the appealer. Upon completion of ~~this~~ all actions in this Plan, the SB C~~c~~hair ~~of the SB~~ shall notify the appealer of the results by letter.

6.3.2 If the appeal is technical in nature, an ad hoc review committee shall be established by the SB C~~c~~hair ~~of the SB; this committee~~, which shall include the SB ~~secretary~~Secretary ~~of the SB~~, SB ~~the v~~Vice-~~chair~~Chair ~~of the SB~~, ~~the~~ responsible consensus committee chair, and at least one other individual with subject matter expertise in the technical area being appealed. ~~; in no case shall the~~ In order to ensure independence, the SB ~~chair~~ Chair ~~of the SB~~ and~~or~~ any member of the responsible ~~subcommittee or~~ working group shall not be appointed to this ~~ad hoc~~ committee. The ad hoc review committee shall work with the responsible working group and the appealer to establish an equitable resolution in view of the technical information publicly available. Upon completion of~~,~~ the ad hoc review committee's ~~action~~assignment, the chair of the SB shall be advised~~,~~ ~~shall~~ review the ~~action~~ process to ensure procedural compliance, shall review the substance and if necessary intervene with a resolution concerning the substance, and shall notify the appealer of the results by letter.

6.4 The appeals process shall be completed in a timely fashion in accordance with SB procedures~~,~~ ~~and~~ with adequate provision for equitable fairness on the part of all participants. The following timetable shall be used as a guide:

Procedural Appeal~~s~~ (Section 6.3.1) ~~(Section 6.2)~~			**Technical Appeal~~s~~ (Section 6.3.2)** ~~(Section 6.3)~~	
SB Chair determines ~~whether the~~ appeal is procedural ~~or technical in nature~~ and advises the responsible consensus committee chair.	15 days after receipt of appeal		SB Chair determines ~~whether the~~ appeal is ~~procedural or~~ technical ~~in nature~~ and advises the responsible consensus committee chair.	15 days after receipt of appeal
Responsible consensus committee chair and subcommittee chair develop~~s~~ a ~~p~~Resolution Plan of A~~a~~ction ~~to resolve the appeal~~ and notifies ~~the~~ SB Chair in writing. ~~(May include consultation with~~	30 days after the SB C~~c~~hair~~'s~~ determination that the appeal is procedural		SB Chair establishes an~~the~~ ad hoc review committee.	15 days after receipt of appeal

Comment [SLS1]: Adition of "aal" implies increased effort. How it this documented?

Comment [SLS2]: This now limits who can do this.

Comment [SLS3]: The formal appeal was received before the informal review started.

Comment [SLS4]: This adds a requirement for a new specific written document which must be archived for ANSI audit.
Again the actions must be completed by the designated persons.

Comment [SLS5]: This requires the Appealer to participate in the development of the plan. However, it does not indicate process if appealer declines or is unavailable.

Comment [SLS6]: This limits the notification method to a formal letter.

Comment [SLS7]: This eliminates most of the Standards Committee persons with technical knowledge in the area. At most the limitation should be applied to the subcommittee chair, if they were involved with the issue in question.

Comment [SLS8]: Is "fairness" not sufficient? What does this add?

Comment [SLS9]: All of this is too detailed and restrictive to include in the ANSI approved rules and procedures.

~~the appealer.)~~				
SB Chair notifies the appealer of the results ~~in writing~~by letter.	15 days after development of ~~the~~ Resolution P~~p~~lan of A~~a~~ction ~~has been developed~~		Ad hoc review committee works with ~~the~~ working group and appealer to establish an equitable resolution and advises ~~the~~ SB Chair in writing.	30 days after establishment of ~~the~~ ad hoc review committee
			SB Chair reviews ad hoc review committee~~'s~~ resolution, ensures procedural compliance, and notifies the appealer by letter~~in writing~~.	15 days after receipt of ~~the~~ad hoc review committee~~'s~~ proposed resolution

Comment [SLS10]: Too detailed and restrictive.

~~6.4~~6.5 To ensure timeliness of completion, e~~E~~ither the individual in the next supportive leadership position, or a designated alternate, may be appointed if any of the individuals named in Sections 6.~~2~~3,~~1~~ ~~through~~ 6.3.1, and 6.3.2~~4~~ ~~above~~ are unable or unavailable to participate.

Comment [SLS11]: The assignment of work should not be included in this document, only the responsibility. As written this would prevent assignment due to preference. Only allowable if assigned individual is not available. How is this to be documented.

ATTACHMENT 9

Consensus Committee Interface Review

ANS Standards Committee Procedures Manual for Consensus Committees (Revised Section 5.2)

Purpose to specify the interface between the CC developing a standard (Developing CC) and the CCs which interface with the standard (NDCC).

- PINS SB Review – Interfacing CCs review PINS and identify the potential interface and need for its review
- NDCCs will be provide copies of the standard at the same time it is sent to the Subcommittee chair for review.
  - Scope of NDCC review limited to deleterious impact, accuracy impacts, conflicts /duplications with NDCC standards.
  - Unrelated comments are not to be included with this review but may be submitted by individuals as part of the public review.
  - Review Logistics:
    - Review 15 days to justify need to ballot
    - 45 days Ballot – comments consolidated by NDCC Chair
    - WG to address comments
    - WG send to Subcommittee chair for Developing CC ballot

ATTACHMENT 10

Liaisons to ANS Professional Divisions— PD Liaisons Updated 12/9/19 (yellow highlight = confirmed PD liaisons)

ANS Professional Division	Name of PD Liaison	Email of PD Liaison	Name of PD Chair	Email of PD Chair	Associated Consensus Committee (see acronym key below)	Name of ANS Standards Committee Liaison	Email of ANS Standards Comm. Liaison or interface
Accelerator Applications	Charles T. Kelsey	ckelsey@lanl.gov	William Horak	horak@bnl.gov	NRNFCC	James O'Brien	James.OBrien@hq.doe.gov
Aerospace Nuclear Science & Technology	Andy Prichard	Andrew.Prichard@pnnl.gov	Jeffrey King	kingjc@mines.edu	*		
Decommissioning & Environmental Sciences	Dustin Miller	dmiller@chaseenv.com	Dustin Miller	dmiller@chaseenv.com	FWDCC	David Hillyer	dwhillyer@hotmail.com
					ESCC	Carl Mazzola	cmazzola@projectenhancement.com
Education, Training, & Workspace Development	Drew Thomas	drew.thomas@inl.gov	Drew Thomas	drew.thomas@inl.gov	LLWRCC	Gene Carpenter	Gene.Carpenter@hq.doe.gov
					NCSCC	John Miller	millerj@sandia.gov
Fuel Cycle & Waste Management	Jeffery R. Brault	jeff_brault@yahoo.com	Jared Johnson	johnsonja@ornl.gov	FWDCC	Jeffery Brault	jeff_brault@yahoo.com
Fusion Energy	Leigh Winfrey	lzw290@psu.edu	Paul Wilson	paul.wilson@wisc.edu	RARCC	George Flanagan	flanagangf@ornl.gov
Human Factors, Instrumentation & Controls	Sacit Cetiner	cetinerms@ornl.gov	Brent Shumaker	brent@ams-corp.com	LLWRCC	Pranab K. Guha	pranab.guha@hq.doe.gov
Isotopes & Radiation	Kimberly Burns (Alternate: R. Gregory Downing)	kimberly.burns@pnnl.gov (Alternate: rgd@ix.netcom.com)	Stephen LaMont	lamont@lanl.gov	ESCC	Carl Mazzola	cmazzola@projectenhancement.com
					ANS-3.4 (under LLWRCC)	William Reuland	wreuland@aol.com
					SRACC	Charlotta Sanders	charlotta@sandersengineering.us
Materials Science & Technology	Troy Munro	troy.munro@byu.edu	Kallie Metzger	metzgeke@westinghouse.com	*		
Mathematics & Computation	Paul Hulse	paul.hulse@sellafieldsites.com	David Griesheimer	dgrieshe@outlook.com	SRACC	Paul Hulse	paul.hulse@sellafieldsites.com
Nuclear Criticality Safety**	Catherine Percher	percher1@llnl.gov	Catherine Percher	percher1@llnl.gov	NCSCC	Doug Bowen	bowendg@ornl.gov
Nuclear Installations Safety	Eric Harvey	eharvey@epri.com	Eric Harvey	eharvey@epri.com	RARCC	George Flanagan	flanagangf@ornl.gov
	Kevin O'Kula	kevin.okula@aecom.com			NRNFCC	James O'Brien	James.OBrien@hq.doe.gov
	Matthew Denman	denman@kairospower.com			JCNRM	Robert Budnitz	budnitz@pacbell.net
Nuclear Nonproliferation Policy	Kelsey Amundson	kamundson5@gmail.com	Alicia Swift	swiftie12@gmail.com	ANS-60.1 (under LLWRCC)	Margaret Harding	margaret@4factorconsulting.com
Operations & Power	Scott Ackerman	scott2ackerman@gmail.com	Chad Boyer	chadboyer64@gmail.com	LLWRCC	Gene Carpenter	Gene.Carpenter@hq.doe.gov
Radiation Protection & Shielding	Irina Popova (PD chair to serve as temp liaison)	popovai@ornl.gov	Irina Popova	popovai@ornl.gov	SRACC	Charlotta Sanders	charlotta@sandersengineering.us
Reactor Physics	Dimitrios Cokinos	cokinos@bnl.gov	Florent Heidet	fheidet@anl.gov	SRACC	Dimitrios Cokinos	cokinos@bnl.gov
Thermal Hydraulics	Wade Marcum	wade.marcum@oregonstate.edu	Chul-Hwa Song	chsong@kaeri.re.kr	SRACC	Andy Smetana (temp)	andy.smetana@srnl.doe.gov'

* Contingent liaison; which would be activated if and when needed

**NOTE: PD chair = PD liaison

PDC Chair	Thomas Remick	thomas.remick@aps.com
PDC Co-Vice Chair	Hans Gougar	hans.gougar@gmail.com
PDC Co-Vice Chair	Deborah Hill	deborah.a.hill@nnl.co.uk
PD Liaison Prgm Coordinato	William Turkowski	turkowwm@westinghouse.com

Note: PD leadership may change after the annual meeting. PD chairs will be contacted to re-confirm PD liaisons.

Consensus Committee Acronym Key	
Environmental and Siting Consensus Committee (ESCC)	Nuclear Criticality Safety Consensus Committee (NCSCC)
Fuel, Waste, and Decommissioning Consensus Committee (FWDCC)	Nonreactor Nuclear Facilities Consensus Committee (NRNFCC)
Joint Committee on Nuclear Risk Management (JCNRM)	Research and Advanced Reactors Consensus Committee (RARCC)
Large Light Water Reactor Consensus Committee (LLWRCC)	Safety and Radiological Analyses Consensus Committee (SRACC)

ATTACHMENT 11

Standards Board Action Item Completed Report for Concurrence			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
11/2019-01	Steven Arndt to provide SB members a copy of the SCARP report on advanced reactors standards when issued. DUE DATE: November 22, 2019	Arndt	Completed Provided 11/22/19
11/2019-02	Robert Budnitz, George Flanagan, Carl Mazzola, and Gene Carpenter (or alternate) to draft a revision to the appeals policy for the Standards Board to review at the June 2020 meeting. DUE DATE: May 1, 2020	Budnitz, Flanagan, Mazzola, Carpenter	Completed A revision to the policy was completed and issued for ballot. One negative vote has been maintained. The objection will be discussed at the 6/9/20 meeting.
11/2019-03	Pat Schroeder to facilitate a teleconference for Robert Budnitz, George Flanagan, Carl Mazzola, and Gene Carpenter (or alternate) to draft a revision to the appeals policy. DUE DATE: January 1, 2020	Schroeder	Completed Teleconference held 1/23/20.
11/2019-04	Pat Schroeder to check on the database being developed by the Diversity and Inclusion Group and determine if it might be useful for standards. NOTE: Steven Arndt to approve correspondence first. DUE DATE: January 1, 2020	Schroeder	Completed P. Schroeder talked to D. Goldberg. Their database is at the concept stage. They may initially use Excel to store a list of potential speakers. Like us, they are also interested in using netForum, our AMS, as a database (DB). Goldberg agreed that our needs for a volunteer DB are very similar and thought that any enhancement of netForum should consider both our needs.
11/2019-05	Pat Schroeder to notify Marilyn Kray, Mary Lou Dunzik-Gougar, and Craig Piercy when the young member/associate member webpage is launched. DUE DATE: The notification will be issued immediately upon completion of the webpage.	Schroeder	Completed Notified 3/10/20.
11/2019-07	Andrew Sowder to provided Steven Arndt and Pat Schroeder the contact information of Tom Basso (potential new NEI point of contact for ANS standards). DUE DATE: December 1, 2019	Sowder	Completed T. Basso info provided; however, Basso is not confirmed as the liaison/POC.
11/2019-08	Pat Schroeder to check with Rick Michal and Mike McQueen on using the SCARP report on advanced reactor standards as the basis for a Nuclear News article. DUE DATE: December 1, 2019	Schroeder	Completed An article on the SCARP report for standards and codes was well received by NN.
11/2019-09	Pat Schroeder to update the Policy Manual with the revised policy on guidance standards and documents as approved by motion. DUE DATE: December 15, 2019	Schroeder	Completed Revised manual is available HERE.

Standards Board Action Item Completed Report for Concurrence

Action Item	Description	Responsibility	Status/Comments /Reassignments
11/2019-10	William Turkowski to reach out to the PCD Chair before each ANS national meeting with a request for him/her to remind their members of the PD/SC Liaison Program. DUE DATE: June 1 and November 1, 2020	Turkowski	Completed W. Turkowski sent an email to the PDC Chair and Vice Chairs in advance of the meeting.
11/2019-11	Larry Wetzel (lead) with James O'Brien and Steve Stamm to work on a process to handle comments and objections from Standards Committee members that are not members of the formal balloting committee and present to the SB for consideration at the next meeting. DUE DATE: May 1, 2020	Wetzel, O'Brien, Stamm	Completed A teleconference was held 1/8/20 and a revised procedure was issued for ballot and approved.
11/2019-12	Pat Schroeder to add Robert Budnitz and George Flanagan to the ANS-3.15 Working Group roster in ANS Collaborate as observers. DUE DATE: November 20, 2019	Schroeder	Completed
11/2019-13	Prasad Kadambi to consult with James O'Brien and Ed Wallace on updated completion dates for Goal 1, D.1 of the SMART Matrix and then to inform Steven Stamm. DUE DATE: December 31, 2019	Kadambi	Completed
11/2019-14	Pat Schroeder to add the bullets preceding the CC chair reports under each CC report on future agendas.	Schroeder	Completed Bullets added to agenda
11/2019-17	Pat Schroeder to remove the SCoRA liaison role from the external liaison list. DUE DATE: December 1, 2019	Schroeder	Completed
6/2019-03	Donald Eggett to lead the 2020 Standards Service Award Selection committee with support from Robert Budnitz, Gene Carpenter, Steven Stamm, and Larry Wetzel. DUE DATE: May 1, 2020	Eggett, Budnitz, Carpenter, Stamm, Wetzel	Completed
11/2018-16	James O'Brien to ask Garrett Smith, DOE's Standards Executive, to nominate a representative for ANS-3.16, "Meteorological Aspects of Wildland Fire Response." DUE DATE: March 1, 2020	O'Brien	Completed Request made directly to G. Smith 6/11/19 during the SB meeting and Smith confirmed receipt.
11/2018-20	Gene Carpenter to setup a teleconference with NRC to proactively discuss changes and answer any questions (within the appropriate restrictions) on ANS-3.5, "Nuclear Power Plant Simulators for Use in Operator Training and Examination" (revision of ANSI/ANS-3.5-2009). DUE DATE: March 1, 2020	Carpenter	Completed A letter to request NRC endorsement was sent and a response was rec'd 4/21/20. NRC staff will consider endorsing ANS-3.5-2018 in a revision of RG 1.149. Rev. of RG 1.149 to start CY 2020.

Standards Board Action Item Completed Report for Concurrence			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
6/2018-16	Gene Carpenter to keep Steven Arndt, Don Eggett, Robert Budnitz, and Gerry Kindred informed of progress on ANS-3.15 (cybersecurity standard) on a quarterly basis. DUE DATE: On-going	Carpenter	Completed G. Flanagan & R. Budnitz have been added to the WG as observers to fulfill the need to keep other CCs informed.
10/2017-28	Steven Arndt to set up a meeting with senior NEI leaders. DUE DATE: February 1, 2020	Arndt	Completed S. Arndt has had several meetings with NEI leadership.
11/2015-21	The LLWRCC to approve a PINS for a cybersecurity standard and forward to the standards manager. DUE DATE: January 1, 2020	Carpenter	Completed The PINS was approved by the LLWRCC and issued to the SB. The SB ballot closed 4/30/20 with one negative currently being addressed.

ATTACHMENT 12
With Attachments A-D

RP3C Report to Standards Board

Virtual Meeting

June 9, 2020

RP3C Report to SB

- SMART Matrix Report
  - RP3C proposal to modify (Attachment A)
- Procedural Guidance Document (GD) and Implementation
  - Addition of Frequently Asked Questions (Attachment B)
  - Feedback sought for continuous maintenance and improvement of GD
- RIPB Community of Practice (CoP)
- CC Chairs Report on Risk-Informed, Performance-Based (RIPB) Standards
  - CC Chairs requested to expand reporting to standards in Attachment C
  - SB meeting should provide for tracking
- Expand RIPB Methods
  - ANS-30.1 and ASME Plant System Design (PSD)
  - ANS-30.3
  - Security standards
  - Seismic categorization model for all types of natural hazards
- Interactions with Working Groups (WGs)
- Other Items

SB SMART Matrix

- Standards Board (SB) SMART Matrix reflects Standards Committee (SC) Strategic Plan
- Goal#1(D)=incorporate RIPB methods in ANS standards
  - Desired outcome for Goal#1(D)(1), (2) and (4) captured by GD and draft training package
  - Desired outcome for Goal#1(D)(4) captured by SB Action Item 11/2018-14
  - Desired outcome for Goal#1(D)(6) will be based on initial implementation of training package
  - Goal#1(D)(5) completed with *Nuclear News* article
  - Outcomes for Goal#1(D)(3) part of implementation and outreach

Proposed Approach to Goal #1 (D)

- SMART Matrix should reflect what is working successfully toward communicating RIPB methods
- SMART Matrix should reflect progress being achieved by WGs in planning for and developing better standards
- SMART Matrix should facilitate RP3C assessing interaction between learning and implementation which occurs differently among the consensus committees (CCs)
- SB should be able to observe and direct RP3C's outreach externally (SDOs, industry, international, etc.)
- It is better to separate internal and external training

Examples of Internal vs. External

- Primary internal resource is GD
  - Socialize SC process, basic concepts, high-level examples
  - Distinguish regulatory precepts from standards development
  - Treat SC training as case studies
- Primary external resource currently is Licensing Modernization Project products
  - NEI 18-04
  - RG 1.233
  - New approaches to external events
  - EPRI resources
  - Pre-application submittals from developers

Revised SMART Matrix for Goal #1 (D)

See Attachment A

- First activity under Goal#1(D) focuses on the GD
  - Activity so far is considered to be socialization of process and concepts in the GD
  - Socialization is useful for newcomers to SC
  - Training is next phase of a new SC member's experience
  - Training would focus on specific examples
- Second activity under Goal#1(D) builds and organizes RIPB resources
  - Resources now include NEI, EPRI, MBSE, NRC, etc.
  - Clarify nexus to standards development

Revised SMART Matrix for Goal #1 (D) (cont'd)

- Third activity under Goal#1(D) is to prepare and deliver external training
  - Part 2 of GD training package will serve as pilot
- Fourth activity under Goal#1(D) is to track and report progress on standards employing RIPB methods
  - Focus will be on "Schedule of ANS Standards in Development Using RIPB Properties"
  - WG Chairs will be expected to report on progress and hurdles regarding RIPB methods
  - CC Chairs will be expected to summarize issues to SB so that cross-cutting problems can be addressed

Guidance Document Development

Refer to Attachment D – and – Attachment B

- For Trial Use GD issued on June 11, 2019
- Discussed during RIPB training sessions
- Updated based upon feedback
- Spreadsheet prepared
- Added Frequently Asked Questions

Support for WG Application of RIPB Methods

- Feedback from CC Chairs
  - CC reports contain section on RIPB implementation
  - CCs need to indicate which standards have been helped and which have not
  - CCs need to identify where additional help is needed
- CC Chairs involvement in improving effectiveness of training
  - Need to go beyond previously identified 23 standards
  - CC subcommittees also have a role in standards that cross CC boundaries

Initiation of CoP Presentations

- Knowledge sharing on RIPB methods and practices will be informal and unstructured
- RP3C initiated CoP presentations as webinars similar to regular meetings
  - Scheduled for last Friday of each month
  - First CoP event in February 2020
  - Three held; Missed May 2020
- Three sessions covered varied areas
  - Systems engineering framework for RIPB practices
  - Incorporating RIPB concepts into ANS-2.21
  - NRC's Reactor Oversight Program as an example of RIPB application
- Reception has been reasonably favorable
  - Recent one was recorded

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

ATTACHMENT A

A SMART strategic plan consists of goals that are **S**trategic, **M**easurable, **A**ttainable, **R**ealistic and **T**ime-related. This matrix takes each of the Initiatives in the ANS SB Strategic Plan and defines the specific activities that need to be done for each Goal and Objective along with its proposed schedule and responsibility. This is a living document. Updates and comments from Standards Board Members will be solicited and the plan adjusted.

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
Completed	Near Term	Overdue			
Goal #1 Align Standards Development Priories with Current and Emerging Needs					
D. Incorporate risk-informed and performance-based methods in ANS standards, where appropriate, by:					
1. Developing appropriate guidance 2. Socialize guidance that is developed 3. Modify and maintain-as-current guidance based on feedback from Working Groups	.RP3C Chair	Jim O'Brien to lead effort related to development and socialization	SB approved piloting draft guidance on trial basis	11/2019	06/2020
	RP3C Chair	Jim O'Brien to lead effort to socialize draft guidance document	Jim O'Brien to lead webinar presentations	06/2020	
	RP3C Chair	Jim O'Brien to receive feedback from socializing efforts and modify documented guidance as appropriate	Jim O'Brien to lead effort to assimilate feedback on specific standards covered by draft guidance to propose to RP3C modifications to documented guidance.		
	RP3C Chair	Kadambi to present to RP3C and to SB for approval modifications to draft guidance document at scheduled meeting	Kadambi to lead effort		
	RP3C Chair	Kadambi to summarize updates to RP3C RIPB Guidance Document at each SB presentation		?????	
Deliver training on RP3C developed internal guidance for RIPB methods to Consensus Committee and Working Group members	RP3C Chair	Jim O'Brien to lead effort to create and deliver training package focused on internally targeted needs of ANS Standards Committee			

SMART Matrix for ANS SC Strategic Plan – Updated 1/6/2020

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
Compile Body of Knowledge potentially useful to ANS Standards Committee for facilitating application of RIPB methods in ANS standards	RP3C Chair	Identify and clarify for relevance to standards Industry documents (NEI, EPRI, etc.)	NEI 18-04 EPRI Report 3002011801 EPRI Report 3002015752 Model-Based Systems Engineering literature		
		Identify and clarify for relevance to standards NRC documents	Reg Guide 1.233 ROP References		
	RP3C Chair	.			
Prepare and Pilot training material relevant to RIPB methods from external sources	RP3C Chair CC Chairs	Pilot training on NEI 18-04	Ed Wallace to lead		
	CC Chairs		.		
	RP3C Chair		).		
	RP3C Chair				
Update and follow-through on “Schedule of ANS Standards in Development using RIPB Properties”	RP3C Chair				
	RP3C Chair				
	RP3C Chair	.			
	CC Chair				
	CC Chair			.	

ATTACHMENT B

RIPB Frequently Asked Questions Regarding Guidance Document (GD)

- Q: How is the GD to be used by standard writers and reviewers with no familiarity about RIPB concepts?

  A: The GD provides information that will help standard writers and reviewers understand RIPB concepts and provides references that can be used to get additional information. Most importantly the GD identifies ANS resources (e.g., RP3C) that can the standard writers and reviewers can go for support.

- Q: What is the relevance of the GD to a specific technology or design being developed by a potential vendor?

  A: The GD is relevant to every standards that supports the development of nuclear facility technologies and designs. However, as discussed in the GD, some standards will utilize RIPB to different degrees and in different manners.

- Q: How does the GD apply to ANS standards currently in use for operating LWRs?

  A: Yes. The Committees and Working Groups responsible for maintenance of the standards should evaluate how the might become more effective if RIPB approaches were adopted.

- Q: How to make use of the GD to decide on “level of detail” issues?

  A: The “level of detail” in a standard relates to standards providing “what” is needed to meet the outcome of the standard rather than “how” to meet the outcome. This also related to the level of prescription that is considered necessary to have confidence in achieving the outcome and the degree of flexibility which is considered appropriate. The GD discusses this and also includes examples where the “level of detail” is discussed for specific Standards.

- Q: How is the GD to be used to incorporate RIPB concepts and methods in standards developed by other Standards Developing Organizations (SDOs) or international ISO standards?

  A: The GD is available as a reference for other SDOs or international ISOs. The concepts in the GD are also applicable to how Standards from these organizations can be made more RIPB.

ATTACHMENT C

Schedule of ANS Standards in Development using RIPB Properties (June 2020)

Standards Project	Draft App'd by WG	+4 months SubC or Preliminary Review/Comment Resolutions	+6 months 1st CC Ballot/Comment Resolutions (concurrent PR)	+4 months 2nd CC Ballot/Comment Resolutions (concurrent PR)	+2 weeks ANS Standards Board Certification	+2 Weeks ANSI Approval	~4 months Publication
ANS-2.22 (T. Jannik)/*ESSC (C. Mazzola) Environmental Radiological Monitoring at Operating Nuclear Facilities JCNRM Rep:	Sept 2020	Oct-Jan 2021	Feb-Jul 2021	Aug-Nov 2021	Dec 2021	Dec 2021	Apr 2022
ANS-2.21 (M. Kinley)/*ESCC (C. Mazzola) Criteria for Assessing Atmospheric Effects on the Ultimate Heat Sink JCNRM Rep:	Dec 2020	Jan - Apr 2021	May - Oct 2021	Nov - Feb 2022	Mar 2022	Mar 2022	Jul 2022
ANS-2.26 (D.Clark) /*ESCC (C. Mazzola) Categorization of Nuclear Facility SSCs for Seismic Design JCNRM Rep:	PINS submitted to ANSI 10/1/19. Schedule TBD.						
ANS-2.34 (S. McDuffie)/*ESCC (C. Mazzola) Characterization and Probabilistic Analysis of Volcanic Hazards RP3C Rep: N. Chokshi / JCNRM Rep:	Dec 2020	Jan - Apr 2021	May - Oct 2021	Nov - Feb 2022	Mar 2022	Mar 2022	Jul 2022
ANS-2.35 (D. Anderson)/*ESCC (C. Mazzola) for Estimating Present & Projecting Future Socioeconomic Impacts from Construction, Operations, and Decommissioning JCNRM Rep:	PINS submitted to ANSI 5/20/19. Schedule TBD.						
ANS-3.13 (OPEN) / *LLWRCC (M. French) Nuclear Facility Reliability Assurance Program (RAP) Development JCNRM Rep:	Project in need of new chair to proceed.						
ANS-3.14 (T. Anselmi)/*NRNFCC (J. O'Brien) Process for Aging Management and Life Extension of NRNF JCNRM Rep: J. O'Brien	Jul 2019 - ? Draft issued to SCoRA & RP3C 7/19/19 in parallel to NRNFCC ballot. Comments taking longer than anticipated to address. Schedule TBD.						
ANS-15.22 (D. Cronin/*RARCC (G. Flanagan) Classification of Structures, Systems and Components for Research Reactors JCNRM Rep:	Dec 2021	Jan - Apr 2022	May - Oct 2022	Nov - Feb 2023	Mar 2023	Mar 2023	Jul 2023
ANS-20.2 (D. Holcomb / *RARCC (G. Flanagan) Nuclear Safety Design Criteria and Functional Performance Requirements for Liquid-Fuel Molten Salt-Reactor Nuclear Power Plants JCNRM Rep:	Mar 2021	Apr - Jul 2021	Aug - Jan 2022	Feb - May 2022	Jun 2022	Jun 2022	Oct 2022
ANS-30.1 (M. Linn) / *RARCC (G. Flanagan) Risk-Informed & Performance-Based NPP Design Process JCNRM Rep: D. Johnson/K. Fleming/A. Maioli	Mar 2020	Mar 2020-? RARCC preliminary review ballot closed 4/17/20. Schedule to be determined once comments addressed. Draft not sent to RP3C or SCoRA at request of RARCC Chair.					
ANS-30.2 (A. Afzali) / *RARCC (G. Flanagan) Categorization Classification of SSCs for New Nuclear Power Plants JCNRM Rep: R. Grantom	Project on hold awaiting determination of path forward with evaluation on the Licensing Modernization Project.						

Schedule of ANS Standards in Development using RIPB Properties (June 2020)

Standards Project	Draft App'd by WG	+4 months SubC or Preliminary Review/Comment Resolutions	+6 months 1st CC Ballot/Comment Resolutions (concurrent PR)	+4 months 2nd CC Ballot/Comment Resolutions (concurrent PR)	+2 weeks ANS Standards Board Certification	+2 Weeks ANSI Approval	~4 months Publication
ANS-30.3 (K. Welter)/*LLWRCC (M. French) Advanced LWR RIPB Design Criteria and Methods JCNRM Rep:		Aug 2019 -? Draft issued to SCoRA, RP3C, RARCC 8/15/19. Comments taking longer than anticipated to address. Schedule TBD.					
ANS-56.2 (E. Johnson)/*LLWRCC (M. French) Containment Isolation Provisions for Fluid Systems After a LOCA JCNRM Rep:	Nov 2021	Dec-Mar 2022	Apr-Sept 2022	Oct-Jan 2023	Feb 2023	Feb 2023	Jun 2023
ANS-57.2 (R. Browder) / *FWDCC (D. Hillyer) Design Requirements for LWR Spent Fuel Storage Facilities at NPPs JCNRM Rep:	Mar 2021	Apr - Jul 2021	Aug - Jan 2022	Feb - May 2022	Jun 2022	Jun 2022	Oct 2022
ANS-57.8 (J. Scaglione)/*FWDCC (D. Hillyer) Fuel Assembly Identification JCNRM Rep:			May-Oct 2020 Draft provied to SCoRA & RP3C on 11/3/19. Draft issued for FWDCC ballot 5/2/20.	Nov-Feb 2021	Mar-21	Mar-21	Jul 2021
ANS-57.9 (M. Sanders)/*FWDCC (D. Hillyer) Design Criteria for an Independent Spent Fuel Storage Installation (Dry Storage Type) JCNRM Rep:		PINS submitted to ANSI 2/2020. Project needs new chair to be initiated.					
ANS-57.11 (B. Eble) / *NRNFCC (J. O'Brien) ISAs for Nonreactor Nuclear Facilities JCNRM Rep:		Closed 6/2/19 with significant comments; resolutions require additional time. Schedule TBD. Draft provided to RP3C, SCoRA, and NCSCC on 4/3/19.					
ANS-59.3 (OPEN / *LLWRCC (M. French) Nuclear Safety Criteria for Control Air Systems JCNRM Rep:		PINS submitted to ANSI 1/10/19. Project not currently active. Schedule TBD. The working group questions whether RIPB methods can be incorporate but will consider as the standard is developed.					

*= ANS responsible consensus committee

ANS Contacts: Prasad Kadambi, RP3C Chair: Phone: 301-236-4162 -- Email: praskadambi@verizon.net

ESCC = Environmental & Siting Consensus Committee

FWDCC = Fuel, Waste, & Decommissioning Consensus Committee

LLWRCC = Large Light Water Reactor Consensus Committee

NRNFCC = Nonreactor Nuclear Facilities Consensus Committee

RARCC = Research and Advanced Reactors Consensus Committee

ATTACHMENT D

Incorporating Risk-Informed and Performance-Based

Approaches/Attributes in ANS Standards

~~**FOR INTERIM TRIAL USE**~~

1. PURPOSE

The purpose of this document is to identify roles and responsibilities and the process for using risk-informed and performance-based (RIPB) approaches, as appropriate, when developing or revising American Nuclear Society (ANS) Standards. For some standards, the incorporation of a RIPB approach/attributes will ~~make them more effective~~optimize their effectiveness for the user community to achieve the standard's outcome(s). This document also helps the Consensus Committees, Subcommittees and Working Groups (WG) decide if and how RIPB approaches can be incorporated into its standard

This document is intended to be used by all Consensus Committees during the development of new ANS standards and the development of revisions to ANS standards. This document may be useful and applicable to other Standards Development Organizations (SDOs).

2. BACKGROUND

In 2013, the ANS Standards Board created the Risk-Informed, Performance-Based Principles and Policy Committee (RP3C) to establish "approaches, priorities, responsibilities and schedules for implementation of risk-informed and performance-based principles in American Nuclear Society (ANS) standards." The RP3C was then tasked with developing a plan "which will provide the approaches and procedures to be used by the ANS ~~SC~~ consensus committees, subcommittees and working groups to implement risk informed and performance based principles in a consistent manner." This document is part of that plan.

Appendix A provides further background on the development of RIPB approaches and how RIPB approaches were successfully incorporated into the Maintenance Rule.

3. ROLES AND RESPONSIBILITIES

The following describes the roles and responsibilities of the ANS Standards Committee (SC) to support implementation of this guide.

3.1 ANS Standards Board

(a) Approve this guidance document and promote its use within all Consensus Committees.

(b) Encourage RP3C to seek and actively invite experience-based feedback from the users of this guide (e.g., consensus committees)

3.2 RP3C Chair

(a) Assign responsibilities to maintain this guidance document (e.g., developing a schedule for its review and update).

(b) Assign responsibilities for developing training on this guidance document.

(c) Assign responsibilities of members for review of new and revised standards.

(d) Provide guidance to WG Chairs during Project Initiation Notification System (PINS) development.

(e) Actively solicit experience-based feedback from the users of this guide.

3.3 RP3C Members

(a) Support reviews of new and revised standards as assigned by the RP3C chair.

(b) Develop training on this guidance document as assigned by the RP3C chair.

(c) Take training on this guidance document as specified by the RP3C chair.

(d) Draw lessons learned from the experiences encountered during 3.3(a)

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3.4 Consensus Committee Chairs

(a) Support awareness of and implementation of this guidance document throughout the various stages of development of new and revised standards.

(b) Take training on this guidance document.

(c) Provide experience-based feedback to improve this guide.

3.5 Working Group Chairs

(a) Take training on the guidance document.

(b) Use this guidance document throughout the development of any new or revised standards for which they are leading.

(c) Provide experience-based feedback to improve this guide.

4. PROCESS

The following describes the process that could be used to initiate or enhance the incorporation of RIPB approaches during the development or revision of standards.

4.1 Working Group (WG) Formation and Project Initiation Notification System Stage

4.1.1 WG Formation:

The WG Chair should consider recruiting a professional with some experience in RIPB approaches to be a part of the WG and consider a training session on this guidance document for all WG members.

4.1.2 PINS Development:

The PINS form includes the following question for the WG Chair:

> *Will this standard use risk-informed insights, performance-based requirements, and/or a graded approach?*

The PINS instructions state that it is strongly recommended that new and revised standards use risk-informed insights, performance-based requirements, and/or a graded approach, where applicable, and that WG Chairs contact the RP3C Chair for guidance to incorporate these methods.

Sections 5.1 and 5.2 of this document provides information on the types of standards where use of risk-informed insights/approaches or performance-based requirements/approaches may be appropriate (this document does not address when a graded approach may be appropriate). The WG chair can also consult with the RP3C Chair.

Note that should incorporating a risk-informed and/or performance-based approach(es) to the standard being developed or revised be deemed inappropriate or not effective, the remainder of this procedure is not applicable to that particular standard. The WG Chair should document and share with their replacement, this evaluation, its assumptions and overall assessment appropriately for consideration by all future Working Groups.

4.2 Standards Development Stage

For standards that have been deemed appropriate to incorporate RIPB approach(es), the WG Chair shall interface with RP3C, as follows:

4.2.1 Early Outlines/Draft

The WG Chair should use this guidance document (particularly Section 5) to support incorporation of RIPB approaches into the standard and should reach out to the RP3C Chair (via standards@ans.org) to request any necessary assistance. The RP3C Chair should offer to assign a member(s), i.e., primary point of contact, to support the WG during the early stages of the standard development.

4.2.2 Pre-Sub-Committee Draft

The WG Chair should send the draft standard to the RP3C for review by the RP3C Chair or designated members of RP3C. The WG should use his/judgment as to when the draft is mature enough to benefit from the RP3C review. Details of the standard ~~do~~ need not ~~necessarily have to have~~ be~~en~~ near completion~~ed~~. The RP3C should schedule and perform the review to minimize any impact to the standard development schedule. The WG Chair has the authority to adopt any of the RP3C recommendations resulting from the review.

In the final stages of ~~At this point in~~ the standard development ~~phase~~, it might be too late to implement any or all of the recommendations. This will be based upon the value added versus the difficulty in implementing the recommendations. The WG Chair should consult with the Subcommittee and Committee Chairs to factor in questions of schedule, volunteer resources (amount and appropriate skill sets), extensiveness of standard rework, etc. so as to chart most the appropriate path forward. It may be that comprehensive risk evaluation and outcome based performance were already passively incorporated into the standard in an optimized fashion. The WG Chair should document appropriately whatever decisions are made in this regard for consideration by future Working Groups.

5. RISK-INFORMED, PERFORMANCE-BASED APPROACHES

~~The following discusses RIPB approaches.~~ As an aide, Table ~~5~~ 1 provides a high-level attributes that are the key elements of the performance-based and risk-informed approaches that can be used to support the development or revision of standards. Examples are provided in Appendix B on how these approaches have been used (and where their use could be enhanced) in some current ANS standards.

5.1 Performance-Based Approaches

All standards should prescribe what (~~the~~ outcome) is to be obtained from using the standard and in an appropriate manner~~to different levels~~, how to obtain the outcome. The "how" includes criteria and methods to validate that the top-level outcome is ~~decomposed~~defined and approached correctly as well as criteria and methods to verify that the outcome is achieved. Outcomes can be continuous (temperature range), discreet (one of several defined configurations) or even binary (on or off) but needs to be clearly defined such as to allow an unambiguous interpretation.

Depending upon the outcome to be achieved, different degrees of prescription on how to achieve that outcome may be appropriate. For example, in calculating the reactor decay heat it is necessary to use scientific first principles, representative data, and applicable equations; therefore, defining the exact steps to perform may be the best means for achieving the outcome.

Alternatively, a standard outcome be a ~~type~~ quality metric or training criteria where it may be appropriate to provide some high level expectations for what needs to be done to meet the outcome and allow flexibility (be less prescriptive) in how to achieve the outcome. For example, a standard might have "not exceeding an exposure limit" as an outcome. The user of the standard can be provided the flexibility on how to meet this outcome, but certain high level

expectations (margin and reliability) might be specified. Generally, where there is more margin, there is room for more flexibility.

Note that a standard needs to provide some level of direction/prescription on what needs to be done to achieve the outcome. Verbatim compliance to a standard must guarantee a successful outcome, even if some criteria in the standard is qualitative or open ended. ~~If it did not, then the standard would have no "shall" statements and would not be a standard.~~ However, a performance-based standard would keep the direction provided at a high level and ~~would~~ allow flexibility in the specific steps that could be taken to achieve the outcome. The degree of flexibility manifests itself by permitting the standard user to determine what performance metrics are necessary (to ensure success) and what the desired values of such metrics should be to declare success, as well as how to ~~measure~~ assess those metrics and their associated uncertainties. The degrees of "hows" would be up to the standard writer; he/she would determine any constraints that would need to be placed on the standard user when determining performance-based metrics, how they will be measured, and what constitutes a success. Less prescriptive approaches are feasible; e.g.: (i) a quality attribute might be "Independent Verifiability"; (ii) criteria and methods to validate that the top-level outcome ~~is~~ is defined and approached correctly ~~decomposed~~ correctly; (iii) criteria and methods to verify that the outcome is achieved. In all cases it is necessary to provide ~~the~~auditable assurance that the outcome is achieved. This assurance should be based on authoritatively-validated principles of the relevant body of knowledge (the science) and reasoning (but could be as simple as a log book entry).

This is outlined in a step by step manner below.

5.1.1 Defining the Ultimate Outcome of the Standard

Clear understanding and ~~statement~~ declaration of the ultimate outcome of the standard is a critical step in the early stage of any standard development. Clear statement of the outcome and those attributes that characterize the outcome will also support efforts to determine whether the standard is candidate for incorporating a performance-based approach. Examples of clear outcome statements are provided in Appendix B.

5.1.2 Define the Approach (Major Steps) to Obtaining the Outcome

All standards define and require the use of an approach for achieving an outcome. This can be done at a high level or at a more detailed (prescriptive manner) depending upon the nature of the standard, the preference of the standard writers, and needs of the standard users. The goal of a standard is to define the approach such that there is a sufficiently high level of confidence that the outcome will be achieved in an efficient manner.

5.1.3 Determine Whether there are Alternative Approaches for Achieving the Outcome.

For some situations, ~~there will only be~~the standard committee might agree there is only one acceptable approach that will result in achieving the outcome (e.g., calculation of decay heat load). ~~In that case, the standard is generally not considered suitable to being written in a performance-based manner~~. Here the outcome may be simple but this does not yet address risks

associated with the approach or outcome which can include uncertainties (unless uncertainty control is part of the outcome).

In other situations, there may be various different means to establish the outcome (e.g., achieving a regulatory compliant ~~n appropriate~~ fire protection ~~program~~ or radiation protection program). In these situations, the level of specificity in the definition of the process for achieving the outcome (or sub-outcomes) should be determined.

5.2 Risk-Informed Approaches

Risk insights can be used to support decisions on the scope, focus, level of rigor or sophistication of the standard (and the program or process that is the subject of the standard). A "risk-informed" approach to decision-making represents a philosophy whereby risk insights are considered together with other factors to establish requirements that better focus attention on design and operational issues commensurate with their importance to health and safety. Risk insights can also be used to support verification that the specified requirements are satisfied. Decisions made in processes described in a standard can be risk-based or risk-informed.

Risk-based decisions are decisions made entirely on specified risk criteria, which could be qualitative or quantitative (but defined). -While it is acceptable to use risk-based steps in a process, broader decisions should be risk-informed. A known system failure or wear rate are examples of defined risks if they can affect the outcome of a standard. Alternatively, a deterministic risk that is qualitative might be a requirement that a substantive notification take place "as soon as practical".

A risk-informed process sets up an integrated decision-making structure that allows consideration of a broad range of technical and stakeholder input uncertainties, imperfections in analysis and decision criteria and knowledge constraints. Regulatory Guide 1.174, *An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis*, is an example of a risk-informed process.

5.2.1. Using Risk Insights to Define the Scope of the Standard

Risk insights can be used to define/narrow the scope of standard, e.g., program elements or structures, systems, and components (SSCs), to those which need to be addressed to meet the outcome. Facilities with risk models may be able to consider quantitative measures, such as risk importance measures as part of the scoping decision. Formal PRA addressing an SSC can also provide risk insights relevant to the standard and might be incorporated to the extent appropriate for obtaining the outcome in either a generic or specific manner.

5.2.2. Using Risk Metrics as Part of the Standards Outcome Statement

The outcome of the standard can be stated in terms of risk metrics such as "As Low As Reasonably Achievable" or "consequence at a given frequency." These may be defined in a formal engineering calculation, system design description or even a regulation but marrying risks and outcomes in a standard can be entirely appropriate on a case by case basis.

5.2.3 Using Risk Insights to Define How to Meet the Standard's Outcome

Risk insights can be used in defining the rigor, sophistication, or level of ~~effort~~ analysis to be used in meeting the standard's outcome. Examples include using risk-insights to help set requirements for testing, surveilling, or inspecting SSCs. For example, a standard that tests a number of similar components could require monthly tests for the high risk category, quarterly tests for the medium risk category, and annual tests for the low risk category. The industry has been successful in implementing risk-informed in-service testing and inspection programs that reduce the rigor and periodicity of tests/inspections, which provide both cost and exposure

savings (RG 1.175, *An Approach for Plant-Specific, Risk-Informed Decision-making: In-service Testing* and RG 1.178, *An Approach For Plant-Specific Risk-informed Decision-making In-service Inspection of Piping*.

Similar to the categorization and focus above, the increase in level of rigor or sophistication can be applied on a ~~continuous~~ graded scale based on risk insights. The treatments can be different and focused based on the specific risk contribution. For example, an SSC may have different functions during different modes of reactor operation. The categorization and the suggested treatment may differ for the different functions. Similarly, the level or rigor and sophistication of an analysis called for in a standard or the elements of a safety program can be tailored based upon risk insights. Further, the standard can specify the use of probabilistic or statistical methods for achieving the outcome. The industry has been successful in identifying safety-related SSCs that have little or no safety significance, and so reduced the regulatory treatment requirements typically placed on safety-related SSC (10 CFR 50.69, *Risk-informed Categorization and Treatment of Structures, Systems and Components*).

Finally, the standard can allow different approaches to be made to achieve outcomes, but require that the approach used be justified to provide assurance that ~~an appropriate level of confidence on the accuracy or repeatability of achieving~~ the outcome is achieved. In other words, ~~(e.g.,~~ by bounding ~~of the~~ residual uncertainty through the~~and~~ contributors to the uncertainty while ~~and allows~~accounting for the relation of~~ing~~ the contributors ~~with~~to the corresponding severity of the consequences~~)~~. An example is where the margin of safety provided (or amount of conservatism) is based on the confidence (or uncertainty) associated with the data or the process used in achieving the outcome.

Table 1. Key RIPB Attributes

Performance-Based Attributes
P1. The outcome of the standard is clearly defined.
P2. The criteria that are established to achieve the outcome are high-level (i.e., provide flexibility in the manner in which the criteria is measured and to determine the "successful" level of the metrics).
Risk-Informed Attributes
R1. The standard defines how to develop the risk insights (e.g., the importance of inputs or steps used in the Standard and any uncertainties in assuptions of intermediary steps).
R2. The standard defines how to use risk insights (e.g., to specify a required actions to

achieve the outcome under identified risks).

APPENDIX A

BACKGROUND ON RISK INFORMED AND PERFORMANCE BASED APPROACHES

A1. GENERAL BACKGROUND

The Nuclear Regulatory Commission (NRC) has defined the RIPB approach as:

> *An approach in which risk insights, engineering analysis and judgment including the principle of defense-in-depth and the incorporation of safety margins, and performance history are used, to (1) focus attention on the most important activities, (2) establish objective criteria for evaluating performance, (3) develop measurable or calculable parameters for monitoring system and licensee performance, (4) provide flexibility to determine how to meet the established performance criteria in a way that will encourage and reward improved outcomes, and (5) focus on the results as the primary basis for safety decision-making.* [Ref 1, SRM-SECY-98-0144].

In ~~SRC~~ SECY-98-0144 the NRC provided characteristic attributes and expected outcomes of applying RIPB approaches in regulations. The following is largely taken from the NRC document.

Outcome Attributes of Risk-Informed Safety:

A “risk-informed” approach to safety decision-making represents a philosophy whereby risk insights are considered together with other factors to establish requirements that better focus licensee and regulatory attention on design and operational issues commensurate with their importance to public health and safety. A "risk-informed" approach enhances the deterministic approach by: (1) allowing explicit consideration of a broader set of potential challenges to safety, (2) providing a logical means for prioritizing these challenges based on risk significance, operating experience, and/or engineering judgment, (3) facilitating consideration of a broader set of resources to defend against these challenges, (4) explicitly identifying and quantifying sources of uncertainty in the analysis (although such analyses do not necessarily reflect all important sources of uncertainty), and (5) leading to better decision-making by providing a means to test the sensitivity of the results to key assumptions. Here, “prioritization” is key; while “risk-informed” means, in part, “not relying purely on the PRA,” it also means being able to say that some scenarios or systems are more important than others and understanding how sure we are about the statements we are making.

Outcome Attributes of Performance-Based Safety:

A performance-based safety approach is one that establishes performance and results as the primary basis for safety decision-making, and incorporates the following attributes: (1) measurable (or calculable) parameters (i.e., direct measurement of the physical parameter of interest or of related parameters that can be used to calculate the parameter of interest) exist to monitor system, including facility and licensee performance, (2) objective criteria to assess performance are established based on risk insights, deterministic analyses and/or performance history, (3) licensees have flexibility to determine how to meet the established performance criteria in ways that will encourage and reward improved outcomes; and (4) a framework exists in which the failure to meet a performance criterion, while undesirable, will not in and of itself constitute or result in an immediate safety concern. A performance-based approach offers two categories of benefits: (1) the focus is on actual performance rather than satisfaction of prescriptive process requirements, and (2) the burden of demonstrating actual performance can be substantially less than the burden of demonstrating compliance with prescriptive process requirements.

Outcome Attributes of Risk-Informed and Performance-Based Safety:

A risk-informed and performance-based approach to safety decision-making combines the "risk-informed" and "performance-based" elements. Stated succinctly, risk-informed and performance-based safety is an approach in which risk insights, engineering analysis and judgment including the principle of defense-in-depth and the incorporation of safety margins, and performance history are used to (1) focus attention on the most important activities, (2) establish objective criteria for evaluating performance, (3) develop measurable or calculable parameters for monitoring system and licensee performance, (4) provide flexibility to determine how to meet the established performance criteria in a way that will encourage and reward improved outcomes, and (5) focus on the results as the primary basis for decision-making. By “results,” we mean actual safety performance, not demonstrations of adherence to mandated processes or prescriptions.

A2. EXAMPLE OF REGULATORY APPLICATION: MAINTENANCE RULE

The nuclear industry has had many successes in implementing RIPB approaches. One area ~~that~~ where the nuclear industry has been particularly successful has been in establishing maintenance programs to meet the NRC Maintenance Rule (10 CFR 50.65), which is a RIPB rule

The following provides examples of risk-informed and performance-based (RIPB) attributes in the Nuclear Regulatory Commission’s (NRC’s) Maintenance Rule. Although there are significant differences between what is put in a regulation versus a standard, the identification and discussion of some of the key attributes in the Maintenance Rule can be beneficial~~ly~~ in understanding what is meant to use a RIPB attributes/approach.

A2.1. Outcome:

The rule states in (a)(1):

> *[liciensees] shall monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these structures, systems, and components, as defined in paragraph (b) of this section, are capable of fulfilling their intended functions.*

Thise is, in essence, the required "outcome." It is clear (Attibute P1 from Table 1) and supports performance-based implementation because it establishes a high level goal. It is risk-informed because it includes a risk metric as part of the outcome (Attribute R2). Note that there are other ways for a rule (or standard to be risk-informed), so one should not think that a risk metric must be included in the outcome for a standard to be risk-informed.

A2.2. Method for Achieving Outcome

Several parts of the rule provide instructions for achieving the outcome. Examples include:

Example 1: *These goals shall be established commensurate with safety and, where practical, take into account industry-wide operating experience.*

This is a high level instruction for how to meet part of the Maintenance Rule's outcome and flexibility is provided on how best to perform this (Attribute P2).

Example 2: *Performance and condition monitoring activities and associated goals and preventive maintenance activities shall be evaluated at least every refueling cycle provided the interval between evaluations does not exceed 24 months*

This is another example of a high level instruction for how to meet part of the Maintenance Rule's outcome (Attribute P2).

Example 3: *[t]he licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. The scope of the assessment may be limited to structures, systems, and components that a risk-informed evaluation process has shown to be significant to public health and safety.*

This is an example of a high level instruction for meeting an element of the Maintenance Rule as well a requirement of develop risk insights and to use risk insights in meeting the Maintenance Rule outcome (Attributes P2, R1 and R2).

APPENDIX B

EXAMPLES OF RISK-INFORMED PERFORMANCE BASED

ATTRIBUTES IN ANS STANDARDS

The following provides examples of performance-based and risk-informed attributes in American Nuclear Society (ANS) standards. The examples are organized to cross reference the attributes to those listed in Table 1 in the main body of this guidance document.

Different types of standards (i.e., standards that define a design basis event; standards that define a safety program, etc.) are used as examples because each of the types can been seen to be more (or less) easily make use of risk-informed and performance-based approaches.

B1. ANSI/ANS-2.26-2004, CATEGORIZATION OF NUCLEAR FACILITY STRUCTURES, SYSTEMS, AND COMPONENTS FOR SEISMIC DESIGN

This "design basis event" type of standard.

B1.1 Performance-Based Attributes

B1.1.1 Attribute P1: Outcome

ANS 2.26 states in the SCOPE section that:

> *This standard provides (a) criteria for selecting the seismic design category (SDC) for nuclear facility structures, systems, and components (SSCs) to achieve earthquake safety and (b) criteria and guidelines for selecting Limit States for these SSCs to govern their seismic design. The Limit States are selected to ensure the desired safety performance in an earthquake.*

In simple terms, the outcome could be stated to be:

> "The outcome of the use of this standard is the identification of the Seismic Design Criteria (SDC) and Limit States for System, Structures, and Components (SSCs) to achieve earthquake safety."

B1.1.2 Attribute P2: High Level Criteria

Three examples of appropriate criterion that have this attribute are provided below:

> *One of the SDCs listed in Table 1 shall be assigned to the SSCs based on the unmitigated consequences that may result from the failure of the SSC by itself or in combination with other SSCs.*

> *Following determination of the regulatory requirements applicable to the project or to the facility, a safety analysis or integrated safety analysis shall be performed. The guidelines provided in this standard and other applicable standards such as Refs. [4] and [5] should be used.*

To achieve the objectives of this standard, the safety analyses shall evaluate the uncertainties with determining failure and the consequences of failure. The depth and documentation of the uncertainty analyses should be sufficient to support the judgment that categorization based on Table 1 and the design requirements in ANSI/ASCE/SEI 43-05 produce a facility that is safe from earthquakes. [Note that this is also an example of a risk-informed approach.]

Note that although ANS 2.26 includes many criteria that provide what needs to be done, it does include some prescriptive criteria and ANS 2.26 invokes other consensus standards that provide very prescriptive criteria for the design of safety SSCs. For example:

SDC-1 and SDC-2 in conjunction with the IBC and SDC-3, SDC-4, and SDC-5 in conjunction with ANS-2.27, ANS-2.29, and ANSI/ASCE SEI 43-05 establish the design response spectra (DRS) and SSC design and analysis Requirements

ANS 2.2.6 also includes some guidance that supports use of performance-based approach to achieving the standards outcome.

The scope and comprehensiveness of the safety analysis will vary with the complexity of the facility, its operations, and the contained hazard. The assignment of an SDC to an SSC determined to have a safety function is based on the objective of achieving acceptable risk to the public, the environment, and workers resulting from the consequences of failure of the SSC.

B1.2 Risk-Informed Attributes

B1.2.1 Attribute R1: Development of Risk Importance

An example of a criterion that has this risk-informed attribute is:

One of the SDCs listed in Table 1 shall be assigned to the SSCs based on the unmitigated consequences that may result from the failure of the SSC by itself or in combination with other SSCs.

This criteria specifies that a higher SDC will be assigned to SSCs whose failure would have greater consequences.

B1.2.2 Attribute R2: Use of Risk Insights

An example of a criterion that has this attribute is;

The scope and comprehensiveness of the safety analysis will vary with the complexity of the facility, its operations, and the contained hazard. The assignment of an SDC to an SSC determined to have a safety function is based on the objective of achieving

acceptable risk to the public, the environment, and workers resulting from the consequences of failure of the SSC.

B2. ANSI/ANS-2.3-2011, ESTIMATING TORNADO, HURRICANE, AND EXTREME STRAIGHT LINE WIND CHARACTERISTICS AT NUCLEAR FACILITY SITES

This "design basis event" related standard.

B2.1 Performance Based Attributes

B2.1.1 Attribute P1: Outcome

ANS 2.3 states in the SCOPE section that:

> *This standard establishes criteria for acceptable guidelines to estimate the frequency of occurrence and the magnitude of parameters associated with rare meteorological events such as tornadoes, hurricanes, and extreme straight line winds at nuclear facility sites within the continental United States.*

The outcome from the use of this standard could be stated to be:

> An estimate of "the frequency of occurrence and the magnitude of parameters associated with rare meteorological events …"

This is a good, clear performance-based outcome statement.

B2.1.2 Attribute P2: High Level Criteria

An example of a criterion that has this attribute is

> *Tornado hazard probability models shall account for the following:*
>
> *(1) constant or gradations of velocity along and across the tornado path;*
> *(2) meteorological conditions affecting the site;*
> *(3) topographical features surrounding the site; and*
> *(4) biases in reporting occurrence and velocity of tornadoes on target structures. .*

This is performance-based because it provides broadly based statements on what needs to be considered, but does not provide details on how to account for these items.

Another example of a criterion that has this attribute is

> *Two basic approaches in the characterization of wind-generated missiles are recognized as acceptable in this standard:*
> *(1) a standard spectrum of missiles; and*

(2) a probabilistic assessment of the hazard.

This is somewhat performance-based (high level) because it provide options for achieving an outcome.

B2.2 Risk-Informed Attributes

~~None identified.~~Uncertainty in outcomes is considered in direct and indirect effects from high winds where secondary effects (power loss) should then be captured elsewhere.

The following is an example of a ~~non~~ RIPB feature that does not immediately portray RIPB methods as described in this guidance (in that it is explicitly prescriptive):

> *The height of the radial inflow layer shall be at least 0.35 R. Above this height, the radial wind is assumed to be zero or to flow outward.*

Note: this does not mean the standard or the criterion is not appropriate in this this may be an optimal means to obtain an outcome based on the science, industry history and/or risk mitigations. There are times when it is very appropriate to be prescriptive and so in this way compliant with RIPB methods. It is recommended that the underlying assumption inherent to such an approach be communicated so that if the standard is ever applied when those assumptions have changed for any reason, this can be identified by the user and addressed.

B3. ANS 2.21, CRITERIA FOR ASSESSING ATMOSPHERIC EFFECTS ON THE ULTIMATE HEAT SINK

This is a "design analysis" type standard.

B3.1 Performance Based Attributes

B3.1.1 Attribute P1: Outcome

ANS 2.21 states in the SCOPE section that:

> *This standard establishes criteria for acceptable guidelines to estimate the frequency of occurrence and the magnitude of parameters associated with rare meteorological events such as tornadoes, hurricanes, and extreme straight line winds at nuclear facility sites within the continental United States.*
>
> *Required analyses are provided for a meteorological assessment of the ultimate heat sink to ensure that design temperatures and cooling capacity requirements for the facility are met.*

The outcome could be stated to be:

> "A determination of whether adequate design temperature and cooling capacity requirements for the facility's ultimate heat sink ~~for a facility~~ are met."
> .

This is a good performance-based outcome where uncertainty in the "adequacy" criterion is captured in the risk informed aspects of the approach.

Note that the introductory statement could be better written (to be consistent with other ANS introduction statements) as:

> *This standard establishes criteria for performing an analysis to determine whether design temperature and cooling capacity requirements for the ultimate heat sink for a facility are met.*

Another example of a criterion that has this attribute is:

> *Ultimate heat sinks shall be designed to have the cooling capacity to provide sufficient cooling water at the maximum allowable inlet temperature under the most adverse meteorological conditions expected for the power plant climatic regime.*

This is a good performance-based statement.

Note that one element of performance-based approaches in industry is the verification that the outcome is met using a measurement. The design goal under the most extreme conditions likely could not be verified by measurement, but measurement of parameters at actual conditions could be compared with calculational results to provide confidence the goal is met. It would be good to consider whether adding this type of criteria would benefit the standards.

B3.2 Risk-Informed Attributes

As a general rule of practice, uncertainties in measurements, observations and assumptions should be considered if they can credibly effect and change the likelihood of an acceptable outcome. Because risks can take many forms, appropriate consideration should be applied accordingly.

B3.2.1 Attribute R1: Development of Risk Importance

An example of a criterion that has this attribute is;

> *The results of the 10-year–or–longer simulation with several extreme events shall be used to perform extreme value statistical analyses that project the most extreme weather conditions for the expected license period of the power plant, which could be 60 years or more.*
>
> *The U.S. Nuclear Regulatory Commission provides guidance in regard to the critical time period. In the case of a cooling lake, the lake temperature may reach a maximum in five days following a shutdown. Therefore, three critical time periods to be included in the assessment are five days, one day, and 30 days to ensure the availability of a 30-day cooling supply. The three periods need not occur contiguously but may be combined to produce a synthetic 36-day period that may be used as the design basis for the lake. In the case of a wet cooling tower, the meteorological conditions resulting in maximum*

evaporation and drift losses shall be the worst 30-day combination of the controlling parameters such as wet-bulb temperature and wind speed.

This does incorporate some risk-informed elements.

ATTACHMENT 13

ESCC Chairman's Report to the ANS Standards Board

Tuesday, June 9, 2020 • ANS Annual Meeting

PINS in Development (2)

- ANS-2.18, "Standards for Evaluating Radionuclide Transport in Surface Water for Power Sites" (new standard)
- ANS-3.16, "Meteorological Aspects of Wildland Fire Response" (new standard)

PINS in Approval/Resolving Comments (2)

- ANS-2.32, "Guidance on the Selection and Evaluation of Remediation Methods for Subsurface Contamination" (new standard)
- ANS-3.11, "Determining Meteorological Information at Nuclear Facilities" (revision of ANSI/ANS-3.11-2015; R2020)

Standards in Development – Approved PINS (6)

- ANS-2.9, "Evaluation of Ground Water Supply for Nuclear Facilities" (reinvigoration of historical standard ANS-2.9-1980; R1989; W1999)
- ANS-2.21, "Criteria for Assessing Atmospheric Effects on the Ultimate Heat Sink" (revision of ANSI/ANS-2.21-2012; R2016)
- ANS-2.22, "Environmental Radiological Monitoring at Nuclear Facilities" (new standard)
- ANS-2.26, "Categorization of Nuclear Facility Structures, Systems, and Components for Seismic Design" (revision of ANSI/ANS-2.26-2004; R2017)
- ANS-2.34, "Characterization and Probabilistic Analysis of Volcanic Hazards" (new standard)
- ANS-2.35, "Estimating the Socioeconomic Impacts of Construction, Operations, and Decommissioning a Nuclear Facility" (new standard)

Standards Projects at Ballot for Termination/Resolving Comments (2)

- ANS-2.16, "Criteria for Modeling Design-Basis Accidental Releases from Nuclear Facilities" (new standard) (ballot to withdraw PINS in progress)
- ANS-3.8.10, "Criteria for Modeling Real-time Accidental Release Consequences at Nuclear Facilities" (new standard) (ballot to withdraw PINS in progress)

Standards at Ballot/Resolving Comments (0)

Standards Recently Approved (5)

- ANSI/ANS-2.8-2019, "Probabilistic Evaluation of External Flood Hazards for Nuclear Facilities" (reinvigoration of historical standard ANS-2.8-1992; W2002) (subsumed ANS-2.31)
- ANSI/ANS-2.27-2020, "Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments" (revision of ANSI/ANS-2.27-2008; R2016)
- ANSI/ANS-2.29-2020, "Probabilistic Seismic Hazard Analysis" (revision of ANSI/ANS-2.29-2008; R2016)
- ANSI/ANS-2.30-2015 (R2020), "Criteria for Assessing Tectonic Surface Fault Rupture and Deformation at Nuclear Facilities" (reaffirmation of ANSI/ANS-2.30-2015)
- ANSI/ANS-3.11-2015 (R2020)," Determining Meteorological Information at Nuclear Facilities" (reaffirmation of ANSI/ANS-3.11-2015)

Standard Recently Published (1)

- ANSI/ANS-2.8-2019, "Probabilistic Evaluation of External Flood Hazards for Nuclear Facilities" (reinvigoration of historical standard ANS-2.8-1992; W2002) (subsumed ANS-2.31)

Delinquent Standards (5+ years since ANSI approval) (0)

No delinquent standards.

Responses to Inquiries (0)

No open inquiries.

Membership Changes (1)

Samuel Rosenbloom retired from the U.S. Department of Energy and remains on the ESCC as an individual.

Volunteer Staffing Needs

Staffing Need (member, chair, etc.) # of positions	Standard #	Date Need Identified (Estimated)	Priority (H or M)*	Date Need Filled	Source**	Date-Actions Taken to Fill Need (Estimated)
Chair+Members	ANS-2.3		M		d, e	various 2018- current
Chair	ANS-2.9	2017	L		a, d, e	2017 - current
Chair+Members	ANS-2.13		M-H		d, e	various 2015- current
Members	ANS-2.18	pre-dates ESCC	M-H		a, d, e	various 2015- current
Members	ANS-2.32		M-H		d, e	various 2015- current
Members	ANS-3.16		M		d, e	various 2015- current
SubC Vice Chairs (2)	• Atmospheric • General/ Monitoring	2014	L		d, e	2014 - current
SubC Vice Chairs (2)	• Hydrogeological • Environmental Impact	2018	L		d, e	2018 various

* High (H) or medium (M) priority based on priority of standard or reaffirmation time limit.
**a. Personal contact, b. standards manager (ANS staff), c. ANS SC referral, d. ANS publication, e. ANS website, f. Linked in post, g. conference speakers and paper authors, h. internet search, i. other

Tracking of RP3C Recommendations to Incorporate RIPB Methods

NOTE: Projects listed below are limited to those on RP3C's initial list of 23 standards recommended to benefit from RIPB methods. The list is not inclusive of all ESCC standards in development using RIPB methods.

					To be considered / NA: Not applicable	In development	
CC Owner (WGC)	DESIGNATION				Estimated Schedule for Drafts in Development Using RIPB Methods	Estimated Consideration Date to Incorporate RIPB Methods	RP3C Proposed Approach	CC Response to Proposed Approach
ESCC (WGC: Y. Gao/R. Schneider)	ANS-	2	8		RP3C comments addressed and standard approved 12/17/2019.			
ESCC (WGCs: D. Clark)	ANS-	2	26		PINS submitted to ANSI 10/1/19 and project initiated.		Approach addressed in 11-2018 RP3C Meeting	Revision will build on RIPB methods already in standard.
ESCC (WGC: K. Hanson)	ANS-	2	27		RP3C comments addressed and standard approved 4/16/2019.			

ATTACHMENT 14

FWDCC Chairman's Report to the ANS Standards Board

Tuesday, June 9, 2020 • ANS Annual Meeting

PINS in Development (0)

- The FWDCC has no PINS is development.

PINS in Approval/Comment Resolution (0)

The FWDCC has no PINS in approval.

Standards in Development – Approved PINS (2)

- ANS-57.2, "Design Requirements for Light Water Reactor Spent Fuel Facilities at Nuclear Power Plants" (reinvigoration of historical standard ANSI/ANS-57.2-1983)
- ANS-57.9, "Design Criteria for an Independent Spent Fuel Storage Installation (Dry Type)" (reinvigoration of historical standard ANS-57.9-1992; R2000) (SB comments require resolution)

Standards at Ballot/Resolving Comments (1)

- ANS-57.8, "Fuel Assembly Identification" (revision of ANSI/ANS-57.8-1995; R2017)

Standards Recently Approved (1)

- ANSI/ANS-57.1-1992 (R2019), Design Requirements for Light Water Reactor Fuel Handling Systems (reaffirmation of ANSI/ANS-57.1-1992; R2015)

Standards Recently Published (0)

No standards were published.

Delinquent Standards (5+ years since ANSI approval) (0)

The FWDCC has no delinquent standards.

Responses to Inquiries Issued (0)

The FWDCC has no open inquiries.

Membership Changes

David Hillyer will step down as FWDCC Chair on June 16, 2020. Jean Francois Lucchini will replace David Hillyer as FWDCC Chair. Maryanne Stasko will replace Jean Francois Lucchini as FWDCC Vice Chair.

Volunteer Staffing Needs

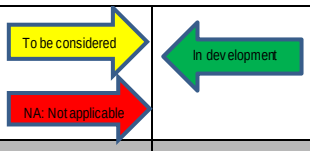
Staffing Need (Member, chair, etc.)# of positions	Standard #	Date Need Identified (Estimated)	Priority (H or M)*	Date Need Filled	Source**	Date-Actions Taken to Fill Need (Estimated)
Chair/Members	ANS-40.21	pre-dates FWDCC	M		d, e	various 2014 - current
Members	ANS-40.35	pre-dates FWDCC	M		d, e	various 2014 - current
Members	ANS-55.1	pre-dates FWDCC	M		d, e, f	various 2014 - current
Members	ANS-55.4	pre-dates FWDCC	M		d, e, f	various 2014 - current
Members	ANS-55.6	pre-dates FWDCC	M		d, e, f	various 2014 - current
Chair/Members	ANS-57.1	pre-dates FWDCC	M		d, e	various 2014 - current
Members	ANS-57.5	pre-dates FWDCC	M		d, e	various 2014 - current
Chair/Members	ANS-57.10	pre-dates FWDCC	M		e	various 2014 - current
Chair/Vice Chair	Decommissioning (Commercial & Research Facilities) SubC	2014	M		d, e	various 2014 - current
Chair/Vice Chair	High Level, GTCC, Low Level, & Mixed Waste Subcommittee	2014	M		d, e	various 2014 - current

Vice Chair	New and Used Fuel (Design Only) SubC	2014	M		d, e	various 2014 - current

* High (H) or medium (M) priority based on priority of standard or reaffirmation time limit.

**a. Personal contact, b. standards manager (ANS staff), c. ANS SC referral, d. ANS publication, e. ANS website, f. Linkedin post, g. conference speakers and paper authors, h. internet search, i. other

Tracking of RP3C Recommendations to Incorporate RIPB Methods



CC Owner (WGC)	DESIGNATION				Estimated Schedule for Drafts in Development Using RIPB Methods	Estimated Consideration Date to Incorporate RIPB Methods	RP3C Proposed Approach	CC Response to Proposed Approach
FWDCC (WGC: OPEN)	ANS-	57	1			Maintenance to be considered by 6/16/2024	LMP LBE approach may be applicable	TBD
FWDCC (WGC: R. Browder)	ANS-	57	3			Maintenance to be considered by 2/27/2023	LMP guidance document may be applicable	TBD

ATTACHMENT 15

JCNRM Chairman's Report to the ANS Standards Board

Tuesday, June 9, 2020

JCNRM relationship to its two sponsoring societies (ANS and ASME)

The activities of the Joint Committee on Nuclear Risk Management (the JCNRM) are overseen by the ANS Standards Board and the ASME Board on Nuclear Codes and Standards. Both Boards must approve all important JCNRM standards actions and administrative changes. Both Boards consider the JCNRM to be a "consensus committee" reporting through the usual channels. The two societies share in the management of the JCNRM, with ANS responsible for the administrative work of editing and publishing all new JCNRM standards, and ASME responsible for the administrative work of arranging meetings, serving as JCNRM Secretary, managing the ballot process, and submitting ANSI documents as needed as well as a few other administrative tasks. The JCNRM is obligated to follow the "Procedures for ASME Codes and Standards Development Committees." Supplemental procedures to address specifics unique to the JCNRM were developed. The ANS Standards Board has approved the procedures.

JCNRM Leadership

The JCNRM is managed by 2 co-chairs and 2 vice co-chairs, representing each society. Robert Budnitz and Rick Grantom serve as the ANS and ASME co-chairs, respectively. Dennis Henneke and Pamela Nelson serve as the ANS and ASME co-vice chairs, respectively. The chair and vice chair terms expire at the end of June 2020. A succession plan is under active consideration.

JCNRM Meetings

Twice annually, in the spring and fall, the JCNRM holds a 4-day meeting that includes meetings of all of its subsidiary subcommittees and working groups, as well as of the main committee. The most recent one was on Monday through Thursday, February 24-27, 2020, in Albuquerque, New Mexico. The numerous working group and subcommittee meetings were held on Monday through Wednesday, involving about 140 participants. The JCNRM Executive Committee met on Tuesday and Wednesday afternoons, and the 4-day-long meeting culminated on Thursday with a full-day meeting of the main committee (i.e., the JCNRM consensus committee). The main committee meeting had technical discussions on several important topics related to the standards-development work that it oversees, and also addressed administrative issues such as membership, awards, open ballots, and proposals for future work. Consideration is being given to initiating a guidance document for risk-informed cybersecurity and physical security methods.

The next set of JCNRM meetings is scheduled for September 21-24, 2020, likely using a virtual format.
.
In these large semi-annual meetings, updates are provided on all projects in development (see the reports below).

ASME/ANS RA-S

The "next edition": Work on the revision of the JCNRM's main flagship PRA standard, ASME/ANS RA-S-2008, has been under way since the release of Addenda B in 2013. A reaffirmation of the standard was approved on November 15, 2019, to keep the standard current until the revision is completed. This next version will be called a "new edition." This new edition is expected to contain many substantive changes based on feedback from recent users of the standard, along with extensive re-formatting and the like. The next edition will be redesignated RA-S-1.1.

A ballot was issued December 16, 2019, and closed February 18, 2020, with 1553 comments (1346 technical, 207 editorial). Comment resolution has involved 8 different working groups assigned to specific parts of the standard, coordinated by the Subcommittee on Standards Maintenance. Conference calls have been occurring regularly to address comments. Comment resolutions are expected to be completed by the end of May with a recirculation ballot issued shortly thereafter.

Seismic PRA Case: The PRA user community requested the JCNRM to produce an expedited version of the next edition's section dealing with seismic PRA. The relevant JCNRM working group worked

diligently for over a year, and produced a new section with updated requirements on seismic PRA that was approved by the JCNRM in March 2018, and issued in April. This "case" has already been used by several US nuclear-power-plant PRA groups that are developing new seismic PRAs, and it was also endorsed by the NRC for certain applications. This is a success story vis-à-vis the responsiveness of the JCNRM to a pressing industry need. A typographical error was recently identified in the Case, and a correction was issued in June 2019.

New Standards in Development

There are 6 new PRA methodology standards in various stages of development. Note that the JCNRM has decided that each of its new standards should be released initially for Trial Use and Pilot Application – not for approval as an American National Standard by the American National Standards Institute (ANSI). In the descriptions below, the trial-use status of each standard now under development is described.

ANS-58.22-2014, "Standard for Low Power and Shutdown Methodology for PRA Applications"

- The writing group is currently led by Jonathan Li, who took over recently from Don Wakefield, who had led the group for over a decade.
- Because of insufficient industry experience and technical differences among several different approaches to the requirements, it took a very long time to complete the trial-use standard; the working group began its work in 1999.
- The trial-use version, ANS/ASME-58.22-2014, was published on March 25, 2015, for a 36-month trial-use period.
- Five pilot applications at operating nuclear power plants were completed.
- Findings from the trial-use period are currently being incorporated into a revision of this standard, based in part on the five pilot applications.
- The final version of this revision is being worked on now, but will be held up until the completion of the "next edition" of our flagship at-power PRA standard, so that this standard can be fully coordinated with that at-power standard.
- A decision will be made by the JCNRM soon whether to incorporate the upcoming revised version into a future revision of ASME/ANS RA-S (the combined Level 1 standard) or to issue it as a stand-alone standard.

ASME/ANS RA-S-1.2-2014, "Severe Accident Progression and Radiological Release (Level 2) PRA Methodology to Support Nuclear Installation Applications" (previously ANS/ASME-58.24)

- The writing group is currently led by Ray Schneider, and this effort has been underway since 2005.
- The trial-use version, ASME/ANS RA-S-1.2-2014, was published on January 5, 2015, for a 24-month trial-use period. A one-year extension of the trial use period was subsequently approved.
- The trial-use period for the Level 2 PRA Standard closed January 2018. The document is still available for use during the current period as the trial-use standard is being revised.
- The revised draft was issued for ballot in late 2019 with the intent of seeking ANSI approval. The ballot closed 1/22/20 with over 600 comments and 11 negatives.
- The working group is currently addressing comments with the intent of resolving the negatives.

ASME/ANS RA-S-1.3-2017, "Standard for Radiological Accident Offsite Consequence Analysis (Level 3 PRA) to Support Nuclear Installation Applications" (previously ANS/ASME-58.25)

- The writing group is now led by Grant Teagarden, who took over in mid-2018 from Keith Woodard, who had chaired this effort since its inception in 2005.
- The trail-use version of this standard was published on July 13, 2017, for a 24-month trial-use period; a one-year extension was subsequently approved extending the trial use period to July 13, 2020.
- The writing group is now working to revise the standard based on insights from the trial uses.
- It is expected that this work will continue through 2020, at which time a new version will be available for JCNRM ballot with the intent of seeking ANSI approval.

ASME/ANS RA-S-1.4-2013, "Advanced Non LWR PRA Standard"

- The writing group is led by Karl Fleming, underway since 2007.
- A JCNRM ballot was held in spring 2013, and the trail-use version was published on December 9, 2013, for trial use and pilot application for a 36-month period.
- Nine pilots of this standard have been completed.
- At the JCNRM meeting in September 2019, an NRC staff member told the committee that the staff was contemplating endorsing the old 2013 (trial-use) version of this standard in a new Regulatory Guide. The JCNRM decided that this was inappropriate, and unanimously passed a motion to send a letter to the NRC staff explaining that a better course is to wait until the new (late 2020-early 2021) version is out before contemplating endorsing it. That letter was issued on November 26, 2019. The NRC response letter dated March 13, 2020, stated that the NRC will postpone endorsement until the revision is issued.
- At the JCNRM meeting in September 2019, it was decided to complete this standard on an expedited schedule.
- A webinar was held March 23, 2020, in advance of the JCNRM ballot to familiarize members with the draft in an effort to reduce comments and expedite approval.
- The revised draft was issued for ballot March 24 with a close date of May 23, 2020.
- The working group is addressing ballot comments as received in an effort to complete comment resolutions a month after the ballot closes with the goal of issuing a recirculation ballot shortly thereafter.
- The goal is to gain JCNRM's approval of the draft for unofficial use in December 2020, although the final editing and the ANSI-approval process is expected to extend a few months into 2021.

ASME/ANS RA-S-1.5, "Advanced Light Water Reactor PRA Standard"

- The project was initiated in 2007. Sarah Bristol is currently the writing group chair.
- The JCNRM calls this the "ALWR PRA Standard."
- A JCNRM ballot was held in spring 2013. Based on ballot comments, additional changes were made to the draft, in part to accommodate applicability to small modular reactors that use light-water coolant.
- The writing group has incorporated additional comments from the NRC into the draft related to the NRC's Advanced-LWR Interim Staff Guidance.
- The team has reached consensus on the definition of Large Release Frequency. Several ballots have been issued to the JCNRM to approve the definition prior to the draft of the full standard being issued for ballot. The definition will be revised and issued for another ballot.
- This standard will be issued initially as a stand-alone standard, and it will be issued initially for trial use. The intent is that it will later be incorporated into a revision of RA-S as a chapter or an appendix.
- The plan is to move ahead with the revision of the existing draft to align with the "next edition."

ASME/ANS RA-S-1.7-201x, "Trial Use Standard for Multi-Unit PRA"

- The working group, led by Ricky Summit with Karl Fleming as vice chair, has been formally underway since early 2019.
- The JCNRM calls this the "MUPRA Standard."
- The PINS for the MUPRA Standard was approved by the ANS Standards Board in May 2019.
- The first working group meeting was held on September 24, 2019, during the recent set of JCNRM meetings.
- The schedule calls for the first version to be ready for JCNRM ballot in late 2020.
- The MUPRA Standard will be issued as a stand-alone standard, and it will be issued initially for trial use. The intent is that it will later be incorporated into a revision of RA-S as an appendix.

Guidance Document for Risk Informing Physical Security and Cyber Security Programs at Nuclear Facilities

The JCNRM is considering initiating a guidance document for risk informing physical-security and cyber-security programs at nuclear facilities. The current technical basis underlying physical-security

and cyber-security programs at nuclear facilities does not take full advantage of the mature, approved analysis methods routinely used in PRA-based analysis of the safety risks at those facilities. This proposed project's objective is to remedy this by providing guidance on how to use such analysis methods in facilitating risk informed decision making to understand security risks better and to counter them more effectively. Specifically, use of the proposed guidance document can increase the effectiveness and efficiency of the physical-security and cyber-security programs, by leveraging risk-informed methods and insights to enhance those programs, such that facility resources can be assigned consistent with public health and safety impact and done in a manner that is technically defensible and consistent with regulation. This guidance document is also expected to provide an important mechanism for obtaining operational and technical experience as part of the technical basis for the development, sometime in the future, of a potential JCNRM standard covering analyses of the type discussed.

Consistent with ANS procedures, a PINS was developed for this guidance document. The PINS was issued to JCNRM for ballot. Comments were incorporated and a revised PINS was issued for a recirculation ballot to the JCNRM on May 8, 2020, with a close date of May 22, 2020. Subject to JCNRM approval, ANS Standards Board concurrence will be sought.

Standards Inquiries and Delinquent Standards

The JCNRM does not have any delinquent standards in need of maintenance.

A response to an inquiry on ASME/ANS RA-S-2008/Sb-2013 was approved and issued in October 2019. The JCNRM has no other active inquiries at this time.

Future Plans

The JCNRM's Executive Committee has been meeting bi-weekly for several years by conference call. The principal focus has always been to serve as the "planning committee" and "coordinating committee" to oversee governance of the large and complex set of JCNRM activities, and to oversee the work of the 150-plus volunteers organized into the three subcommittees and 16 working groups, with an eye on planning for up to about two years out. A current planning action is considering a reorganization of the JCNRM's subcommittee structure as standards under the Subcommittee on Standards Development are approved by ANSI and move to the maintenance phase. A few options are being discussed.

The most important JCNRM effort now is to complete the next version of the main PRA Standard ASME/ANS RA-S (see discussion above.) The other major JCNRM task is to complete and issue the Non-LWR PRA Standard this year and to complete and issue the ALWR PRA Standard next year. All of these are major efforts.

Another important task is following the progress of the several "trial-use applications" of our new standards, to assure that the way they approach their work provides as much useful feedback information as feasible to the JCNRM.

Finally, the JCNRM has been working with groups in several foreign countries about forming what we are calling "JCNRM International Working Groups" (IWGs). The Chinese and the Japanese have each already formed an IWG that the JCNRM has approved, and another new IWG is under active discussion in Korea. The Canadians have also inquired about the possibility, although their inquiry is currently dormant. Each IWG consists of several PRA and risk-management experts in the respective country who have agreed to perform reviews of JCNRM draft standards, to perform trial applications of our standards as appropriate, to propose changes to our standards or other new JCNRM initiatives, and generally to act as an "arm" of the JCNRM in the respective country. The Chinese IWG and the Japanese IWG each consist of a couple of dozen engineers. Each of these IWGs holds physical meetings in the foreign country, and its proceedings take place mostly in the foreign language. Each IWG has a chair designated by them but approved by the JCNRM, and each IWG chair will likely be appointed as a voting member of the JCNRM itself, although that decision will be taken on a case-by-case basis. (We have insisted that the English language skills of each IWG chair be acceptably competent. This has not been a problem at all so far.) The JCNRM sees the formation of IWGs as a

way to involve foreign experts in an organized activity that can assist the JCNRM in its technical work. The benefit to our foreign colleagues is early access to our work products and an opportunity to influence them technically at a relatively early stage.

Financial Support

A series of grants to the ANS from the U. S. Nuclear Regulatory Commission (NRC) have provided financial support for the work of the JCNRM, to cover travel costs of participants who have no other financial support, and also to cover a few other selected administrative and meeting expenses. The latest of these was formally awarded in February 2020 and allows funds to be used through February 2025.

ATTACHMENT 16

LLWRCC Chairman's Report to the ANS Standards Board

Tuesday, June 9, 2020 • ANS Annual Meeting

PINS in Development (2)

- ANS-58.2, "Design Basis for Protection of Light Water Nuclear Power Plants Against the Effects of Postulated Pipe Rupture" (reinvigoration of historical standard)
- ANS-60.1, "Export Control Standard" (proposed new standard—title TBD)

PINS in Approval (1)

- ANS-3.15, "Risk-Informing Critical Digital Assets (CDAs) for Nuclear Power Plant Systems" (proposed new standard) NOTE: Standards Board comments on the PINS are currently being addressed.

Standards in Development – Approved PINS (6)

- ANS-3.5.1 "Nuclear Power Plant Simulators for Use in Simulation-Assisted Engineering and Non-Operator Training" (proposed new standard)
- ANS-3.8.7, "Properties of Planning, Development Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness at Nuclear Facilities" (revision of historical standard ANSI/ANS-3.8.7-1998) ****LLWRCC members proposed a redirection of the emergency preparedness standards to new nonLWR plants. This includes ANS-3.8.1, ANS-3.8.2, ANS-3.8.3, and ANS-3.8.6.****
- ANS-3.13 "Nuclear Plant Reliability Assurance Program (RAP) Development Guidance for Design, Construction, and Operation" (new standard)
- ANS-30.3, "Advanced Light-Water Reactor Risk-Informed Performance-Based Design Criteria and Methods" (new standard)
- ANS-56.2, "Containment Isolation Provisions for Fluid Systems After a LOCA" (historical revision of ANSI/ANS-56.2-1984; W1999)
- ANS-59.3, "Nuclear Safety Criteria for Control Air Systems" (reinvigoration of historical standard)

Standards at Ballot/Resolving Comments (7)

- ANSI/ANS-18.1-2016, "Radioactive Source Term for Normal Operation of Light Water Reactors" (for withdrawal)
- ANS-18.1-202x, "Radioactive Source Term for Normal Operation of Light Water Reactors" (revision of ANSI/ANS-18.1-2016)
- ANS-51.10-201x, "Auxiliary Feedwater System for Pressurized Water Reactors" (revision of ANSI/ANS-51.10-1991; R2018)
- ANS-56.8-202x, "Containment Leakage Testing Requirements" (revision of ANSI/ANS-56.8-2002; R2016)
- ANS-58.9-2002 (R202x), "Single Failure Criteria for Light Water Reactor Safety-Related Fluid Systems" (reaffirmation of ANSI/ANS-58.9-2002; R2015)
- ANS-59.51-1997 (R202x), ""Fuel Oil Systems for Safety-Related Emergency Diesel Generators" (reaffirmation of ANSI/ANS-59.51-1997; R2015)
- ANS-59.52-1998 (R202x), "Lubricating Oil Systems for Safety Related-Emergency Diesel Generators" (reaffirmation of ANSI/ANS-59.52-1998; R2015)

Standards Recently Approved (1)

- ANSI/ANS-3.1-2014 (R2020), "Selection, Qualification, and Training of Personnel for Nuclear Power Plants" (reaffirmation of ANSI/ANS-3.1-2014)

Standards Recently Published (0)

- No standards recently published.

Delinquent Standards (5+ years since ANSI approval) (0)

- No delinquent standards at this time.

Responses to Inquiries in Development/Approval (0)

- An inquiry was received 5/21/20 on ANS-51.1-1983, "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants." The inquiry is currently being reviewed to determine if it qualifies for a response under our policy on responding to inquiries.

Membership Changes

Gene Carpenter stepped down as LLWRCC Chair effective March 31, 2020. Michelle French was appointed LLWRCC Acting Chair. Consistent with rules and procedures, members have been provided a two-month notice of an election and the opportunity to express interest. Presently, no other interest has been expressed. An election ballot is scheduled to be issued June 23, 2020. The LLWRCC had two other membership changes. Robert Burg resigned from the LLWRCC, and Pranab Guha retired from the U.S. Department of Energy and is now classified as an individual.

Volunteer Staffing Needs

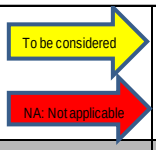
Staffing Need (Member, chair, etc.)# of positions	Standard #	Date Need Identified (Estimated)	Priority H or M)*	Date Need Filled	Source**	Date-Actions Taken to Fill Need (Estimated)
Chair/Members	ANS-3.13	2014	M		d, e	various 2014-current
Members	ANS-51.10	2014	H		d, e, f	various 2014-current
Chair/Members	ANS-58.6	2014	M		d, e	various 2014-current
Chair/Members	ANS-58.9	April 2017	M		d, e	various 2017-current
Chair/Members	ANS-58.11	pre-dates LLWRCC	M		d, e	various 2014-current
Chair/Members	ANS-59.3	2018	M		d,e	Various 2018-current
Members	ANS-59.51	pre-dates LLWRCC	M	Chair committed 3/2/2017	d, e, f	various 2014-current
Members	ANS-59.52	pre-dates LLWRCC	M	Chair committed 3/2/2017	d, e, f	various 2014-current
Members	ANS-60.1	2016	M		d, e	various 2016-current
Chair/Vice Chair	LWR & Reactor Auxiliary Systems Designs SubC	2020-Chair 2018-VC	H		d, e	April 2018-current
Chair/Vice Chair	Power Generation & Plant Support Systems SubC	2017-Chair 2020-VC	H		d, e	2017-current

* High (H) or medium (M) priority based on priority of standard or reaffirmation time limit.

**a. Personal contact, b. standards manager (ANS staff), c. ANS SC referral, d. ANS publication, e. ANS website, f. Linkedin post, g. conference speakers and paper authors, h. internet search, i. other

Report continued on the next page

Tracking of RP3C Recommendations to Incorporate RIPB Methods

								
CC Owner (WGC)	DESIGNATION				Estimated Schedule for Drafts in Development Using RIPB Methods	Estimated Consideration Date to Incorporate RIPB Methods	RP3C Proposed Approach	CC Response to Proposed Approach
LLWRCC (WGC: J. Sickle)	ANS-	3	1			Believed to be NA for RIPB Maintenance to be considered by 11/20/2019	RP3C recommends PB approach with fitness-for-service considerations	LLWRCC is waiting until guidance document training.
LLWRCC (WGC: M. Smith)	ANS-	3	2			Maintenance to be considered by 4/4/2022	RP3C considers this a high priority standard for RIPB	LLWRCC is waiting until guidance document training.
LLWRCC (WGC. OPEN)	ANS-	3	13		Project being re-evaluated; WG being reformed		RP3C considers this a high priority for advanced non-LWRs	LLWRCC is waiting until guidance document training.
LLWRCC (WGC: K. Geelhood)	ANS-	18	1			Maintenance to be considered by 11/1/2021	LMP work in context of DG-1353 should be considered	LLWRCC is waiting until guidance document training.
LLWRCC (WGC. E. Johnson-Turnipseed)	ANS-	51	10			Revision currently in final stage was initiated before RP3C. RIPB methods to be incorporated in next revision.	RP3C has reported interactions with WG	LLWRCC is waiting until guidance document training.
LLWRCC (WGC: J. Glover)	ANS-	56	1			Inactive project in consideration.	Work done with LMP on H2 control is relevant	LLWRCC is waiting until guidance document is issued to address.
LLWRCC (WGC: J. Glover)	ANS-	56	8			NA - a revision of this standard has been in development for some time; prior to formation of RP3C and is expected to be issued for ballot in 2019 with ANSI approval the following year. The next maintenance consideration in ~2024.	Part 50 App J is PB	LLWRCC is waiting until guidance document is issued to address.
LLWRCC (WGC: H. Liao)	ANS-	58	8		**RP3C comments addressed and standard approved 8/8/2019.**			
LLWRCC (WGC:OPEN)	ANS-	58	9			Decision and schedule pending new chair/formation of WG.	SFC may be one of the high priority standards for LMP guidance application	LLWRCC is waiting until guidance document training.
LLWRCC (WGC: M. Linn)	ANS-	58	14			Maintenance to be considered by 1/17/2022	LMP guidance definitely applicable	LLWRCC is waiting until guidance document training.
LLWRCC (WGC: M. Dooley)	ANS-	59	51			PINS in development; WG being formed.	High likelihood of PB guidance being applicable	LLWRCC is waiting until guidance document training.
LLWRCC (WGC: M. Dooley)	ANS-	59	52			PINS in development; WG being formed.	High likelihood of PB guidance being applicable	LLWRCC is waiting until guidance document training.

ATTACHMENT 17

NRNFCC Chairman's Report to the ANS Standards Board

Tuesday, June 9, 2020 • ANS Annual Meeting

PINS in Development/Approval (0)

- No PINS are in development or approval.

Standards at Ballot/Resolving Comments (2)

- ANS-3.14-202x, "Process for Aging Management and Life Extension of Nonreactor Nuclear Facilities" (new standard)
- ANS-57.11-202x, "Integrated Safety Assessments for Nonreactor Nuclear Facilities" (new standard)

Delinquent Standards (5+ years since ANSI approval) (0)

There are no delinquent standards.

Responses to Inquiries (0)

No open inquiries.

Standards Recently Approved (1)

- ANSI/ANS-58.16-2014 (R2020), "Safety Categorization and Design Criteria for Nonreactor Nuclear Facilities" (reaffirmation of ANSI/ANS-58.16-2014)

Standards Recently Published (0)

- No standards have been published.

Membership Changes

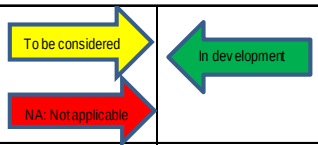
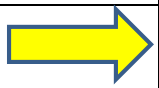
Several members have recently changed employment but remain on the committee. Balance of interest categories have been updated accordingly. The NRNFCC remains in balance. Members with employment changes include the following:

- Todd Anselmi is now with Idaho National Laboratory
- Charles Martin is now with Longenecker & Associates, Inc.
- Paul Rogerson is now with Savannah River Nuclear Solutions

Volunteer Staffing Needs (0)

The NRNFCC currently has no staffing needs. If a decision is made that a revision of ANSI/ANS-58.16-2014 (R2020) should be initiated, working group members will be recruited.

Tracking of RP3C Recommendations to Incorporate RIPB Methods

								
NRNFCC (WGCs: T. Anselmi & C. McMullin)	ANS-	3	14		Draft issued for CC, RP3C, and SCoRA review.		RP3C working with CC Chair	Recognized during 5/21/19 call. WG response to RP3C review comments pending.
FWDCC (WGC: R. Eble)	ANS-	57	11		Draft issued for CC, RP3C, and SCoRA review.		RP3C is ready to help	Recognized during 5/21/19 call. WG response to RP3C review comments pending.
NRNFCC (WGC: P. Rogerson)	ANS-	58	16			Maintenance in consideration.	High likelihood of LMP guidance being applicable	Recognized during 5/21/19 call.

ATTACHMENT 18

NCSCC Chairman's Report to the ANS Standards Board

Tuesday, June 9, 2020 • ANS Annual Meeting

PINS in Development (3)

- ANS-8.10, "Criteria for Nuclear Criticality Safety Controls in Operations With Shielding and Confinement" (revision of ANSI/ANS-8.10-2015; R2020)
- ANS-8.17, "Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors" (revision of ANSI/ANS-8.17-2004; R2019)
- ANS-8.19, "Administrative Practice for Nuclear Criticality Safety" (revision of ANSI/ANS-8.19-2014; R2019)

PINS in Approval (0)

No PINS are currently in approval.

Standards in Development – Approved PINS (8)

- ANS-8.1, "Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors" (revision of ANSI/ANS-8.1-2014; R2018)
- ANS-8.3, "Criticality Accident Alarm System" (revision of ANSI/ANS-8.3-1997; R2017)
- ANS-8.7, "Nuclear Criticality Safety in the Storage of Fissile Materials" (revision of ANSI/ANS-8.7-1998; R2017)
- ANS-8.12, "Nuclear Criticality Control and Safety of Plutonium-Uranium Fuel Mixtures Outside Reactors" (revision of ANSI/ANS-8.12-1987; R2016)
- ANS-8.20, "Nuclear Criticality Safety Training" (revision of ANSI/ANS-8.20-1991; R2020)
- ANS-8.22, "Nuclear Criticality Safety Based on Limiting and Controlling Moderators" (revision of ANSI/ANS-8.22-1997; R2016)
- ANS-8.26, "Criticality Safety Engineer Training and Qualification Program"(revision of ANSI/ANS-8.26-2007; R2016)
- ANS-8.28, "Administrative Practices for the Use of Non-Destructive Assay Measurements for Nuclear Criticality Safety" (new standard)

Standards @ Ballot/Resolving Comments (2)

- ANS-8.21-202x, "Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors" (revision of ANSI/ANS-8.21-1995; R2019) (NOTE: The ballot was issued in 2017.)
- ANS-8.27-2015 (R202x), "Burnup Credit for LWR Fuel" (reaffirmation of ANSI/ANS-8.27-2015)

Standards Recently Approved (2)

- ANSI/ANS-8.10-2015 (R2020), "Criteria for Nuclear Criticality Safety Controls in Operations With Shielding and Confinement" (reaffirmation of ANSI/ANS-8.10-2015)
- ANSI/ANS-8.20-1991 (R2020), "Nuclear Criticality Safety Training" (reaffirmation of ANSI/ANS-8.20-1991; R2015)

Standards Published (0)

No standards have recently been published.

Delinquent Standards – 5+ Years Since ANSI Approval (0)

The NCSCC has no delinquent standards.

Responses to Inquiries in Development (1)

There are no open inquiries at this time.

Membership Changes

Ernie Elliott is now with BWX Technologies, Inc, the same company as Larry Wetzel. The NCSCC approved the justification for both Elliott and Wetzel to have separate votes.

Volunteer Staffing Needs

The NCSCC has no staffing needs.

Tracking of RP3C Recommendations to Incorporate RIPB Methods

NA – No standards identified.

ATTACHMENT 19

RARCC Chairman's Report to the ANS Standards Board

Tuesday, June 9, 2020 • ANS Annual Meeting

PINS in Development (0)
No PINS in development.

PINS in Approval (0)
No PINS are currently in approval.

Standards in Development – Approved PINS (6)
- ANS-1, "Conduct of Critical Experiments" (revision of ANSI/ANS-1-2000; R2012)
- ANS-15.22, "Classification of Structures, Systems and Components for Research Reactors" (new standard)
- ANS-20.2, "Nuclear Safety Design Criteria and Functional Performance Requirements for Liquid-Fuel Molten Salt Reactor Nuclear Power Plants" (new standard)
- ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Nuclear Safety Designs" (new standard)
- ANS-30.2, "Structures, Systems, and Component Classification for Nuclear Power Plants" (new standard)

Standards Issued for Preliminary Review (1)
- ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Safety Designs" (new standard)

Standards at Ballot/Resolving Comments (1)
No standards are currently at ballot.

Standards Approved (2)
- ANSI/ANS-15.16-2015 (R2020), "Emergency Planning for Research Reactors" (reaffirmation of ANSI/ANS-15.16-2015)
- ANSIANS-54.1-2020, "Nuclear Safety Criteria and Design Process for Liquid-Sodium-Cooled Reactor Nuclear Power Plants" (revision of historical standard ANSI/ANS-54.1-1989)

Delinquent Standards (5+ years since ANSI approval) (0)
No delinquent standards.

Responses to Inquiries (0)
The RARCC has no open inquiries.

Staffing Needs

Staffing Need (Member, chair, etc.)# of positions	Standard #	Date Need Identified (Estimated)	Priority (H or M)*	Date Need Filled	Source**	Date-Actions Taken to Fill Need (Estimated)
Members	ANS-53.1	11/2018	M		d, e	various 2014-current

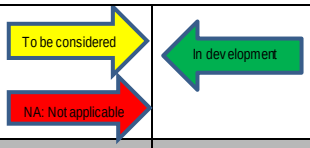
* High (H) or medium (M) priority based on priority of standard or reaffirmation time limit.

**a. Personal contact, b. standards manager (ANS staff), c. ANS SC referral, d. ANS publication, e. ANS website, f. Linkedin post, g. conference speakers and paper authors, h. internet search, i. other

Membership Changes
Several RARCC members' employer or employment status changed since the 2019 winter meeting, but the balance of interest remains in compliance. The changes are as follows:
- Donald Spellman took a position at Xcel Engineering and was reclassified 12/5/19 to a consultant.

- George Flanagan retired from Oak Ridge National Laboratory effective 12/31/19 and was reclassified to an individual.
- Jason Andrus with Idaho National Laboratory (INL) was confirmed as a new RARCC member effective 12/23/19 to represent advanced reactors. Sean O'Kelly, also with INL, will continue to represent test and research reactors. With a shared vote for INL, there is no effect on balance of interest.
- Alexander Adams retired from the U.S. Nuclear Regulatory Commission (NRC) effective 12/31/19 and in parallel from all standards activities. Jan Mazza remains on the RARCC representing the NRC. Adams and Mazza shared a vote so there is no effect on balance of interest.

Tracking of RP3C Recommendations to Incorporate RIPB Methods



CC Owner (WGC)	DESIGNATION				Estimated Schedule for Drafts in Development Using RIPB Methods	Estimated Consideration Date to Incorporate RIPB Methods	RP3C Proposed Approach	CC Response to Proposed Approach
RARCC (WGC: J. August)	ANS-	53	1			PINS in development; will work with RP3C.	RP3C working with WG Chair	Agreement
RARCC (WGC: G. Flanagan)	ANS-	54	1		RP3C comments addressed and standard approved 3/23/2020.			
RARCC (WGC: OPEN)	ANS-	54	6			NA - no plans to ressurect this inactive project	Needs more consideration	NA

ATTACHMENT 20

SRACC Chairman's Report to the ANS Standards Board

Tuesday, June 9, 2020 • ANS Annual Meeting

PINS in Development (1)

- ANS-19.8, "Fission Product Yields for 235U, 238U, and 239P" (proposed new standard)

Standards in Development – Approved PINS (7)

- ANS-6.4.2, "Specification for Radiation Shielding Materials" (revision of ANSI/ANS-6.4.2-2006)
- ANS-6.4.3, "Gamma-Ray Attenuation Coefficients & Buildup Factors for Engineering Materials" (reinvigoration of historical standard ANSI/ANS-6.4.3-1991)
- ANS-10.4, "Verification and Validation of Non-Safety-Related Scientific and Engineering Computer Programs for the Nuclear Industry" (revision of ANSI/ANS-10.4-2008; R2016)
- ANS-19.3, "Steady-State Neutronics Methods for Power Reactor Analysis" (revision of ANSI/ANS-19.3-2011; R2017)
- ANS-19.3.4, "Determination of Thermal Energy Deposition Rates in Nuclear Reactors" (revision of ANS-19.3.4-2002; R2017)
- ANS-19.5, "Requirements for Reference Reactor Physics Measurements" (historical revision of ANSI/ANS-19.5-1995—new standard)
- ANS-19.9, "Delayed Neutron Parameters for Light Water Reactors" (new standard)

Standards at Ballot/Resolving Comments (2)

- ANS-6.1.1, "Neutron and Photon Fluence-to-Dose Conversion Coefficients" (reinvigoration of historical standard ANSI/ANS-6.1.1-1991)
- ANS-6.3.1, "Program for Testing Radiation Shields in Light Water Reactors (LWR)" (reaffirmation of ANSI/ANS-6.3.1-1987; R2015)

Standards Recently Approved (3)

- ANSI/ANS-5.4-2011 (R2020), "Method for Calculating the Fractional Release of Volatile Fission Products from Oxide Fuel (reaffirmation of ANIS/ANS-5.4-2011)
- ANSI/ANS-6.6.1-2015 (R2020), "Calculation and Measurement of Direct and Scattered Radiation from LWR Nuclear Power Plants" (reaffirmation of ANSI/ANS 6.6.1-2015)
- ANSI/ANS-19.6.1-2019, "Reload Startup Physics Tests for Pressurized Water Reactors" (revision of ANSI/ANS-19.6.1-2011; R2016)

Standards Recently Published (1)

- ANSI/ANS-19.6.1-2019, "Reload Startup Physics Tests for Pressurized Water Reactors" (revision of ANSI/ANS-19.6.1-2011; R2016)

Delinquent Standards (5+ years since ANSI approval) (0)

There are no delinquent standards.

Responses to Inquiries in Development (0)

The SRACC has no open inquiries.

Membership Changes

Arzu Alpan changed employment from Westinghouse to Oak Ridge National Laboratory and has been reclassified. The SRACC remains in balance of interest compliance.

Volunteer Staffing Needs

Staffing Need (Member, chair, etc.)# of positions	Standard #	Date Need Identified (Estimated)	Priority (H or M)*	Date Need Filled	Source**	Date-Actions Taken to Fill Need (Estimated)
Chair/Members	ANS-6.3.1	2015	M		d,e	various 2015-current

Chair	ANS-19.5	2018	M		a, d, e	various 2018-current
Members	ANS-19.8	pre-dates SRACC	M		a, d, e	various 2014-current
Chair/Members	ANS-19.9	pre-dates SRACC	M		a, d, e	various 2014-current
Chair/Members	ANS-19.12	pre-dates SRACC	M		d, e	various 2014-current

* High (H) or medium (M) priority based on priority of standard or reaffirmation time limit.

**a. Personal contact, b. standards manager (ANS staff), c. ANS SC referral, d. ANS publication, e. ANS website, f. Linkedin post, g. conference speakers and paper authors, h. internet search, i. other

Tracking of RP3C Recommendations to Incorporate RIPB Methods

NA – No standards identified.

ATTACHMENT 21

ANS Standards Board Task Groups

(Updated 10/2019)

NOTE: This list should be updated with new members if the TG initiative is re-activated.

Policy Task Group

Scope: Function as an advisory group to the chair of the Standards Board (SB) on administrative or procedural issues referred to it from the SB. Interface with the ANS Board of Directors and Standing Committees on policy issues that affect the ANS strategic plan. Review external requests from other SDOs, government organizations, and the public for relevance to the activities of the standards committee and make recommendations on these requests to the SB chair. This does not include clarifications and inquiries on specific standards that are handled under the Standards Committee rules and procedures. Resolve questions referred to the task group from the SB relative to questions or clarifications of Standards Committee policies, rules, and procedures. Membership includes the current and past chairs of the ANS SB, the current SB vice chair, and the standards manager.

Steven Arndt, Chair*
George Flanagan
Prasad Kadambi
Patricia Schroeder

NOTE: Current SB Chair = Policy TG Chair

External Communications Task Group

Scope: Improve the links between ANS and users (utilities, designers, architect engineers, universities, national labs, and fuel fabricators), national regulators, other U.S. SDOs, and international SDOs. One member should be actively involved with the NRC Standards Forum.

OPEN, Chair*
Amir Afzali
Stanley Levinson (JCNRM/SCoRA)

Internal Communications Task Group

Scope: Establish closer relationships with ANS governance and technical divisions. Attempt to get more direct representation from technical divisions on standards committees. Revise a training module prepared by Steve Stamm into several modules for different audiences and set up regular presentations at the ANS biannual meetings. Develop an active/inactive Standards Committee members grouping system and methods to encourage non-involved volunteers to become active working group members.

Bill Turkowski , Chair (SB)*

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* Chair (may be changed at the discretion of the task group)
** No CC chairs on the task groups other than by personal preference

ATTACHMENT 22

Links Between the ANS Standards Committee and Other SDOs and Other Related Organizations (5/29/19)

NOTE: List will need updating/verification by new External Communications TG Chair

Name of SDO/and Other Related Organizations	Standards Committee Liaison	Link Adequate Y or N?	Next Actions
ACI		?	
AISC		?	
AGS	Jeffery Brault (NRNFCC)	Y	
AIChE		?	
ANSI & ISO TC 85 SC 6	Prasad Kadambi (SB)	Y	
ASCE	Carl Mazzola (SB)	Y	
ASME NQA	Chuck Moseley (LLWRCC)	Y	
ASTM-C26		?	
EPRI	Andrew Sowder (SB)	Y	
IEEE/NPEC	Donald Spellman (SB liaison to NPEC) Dr. Richard Wood (NPEC liaison to SB)	Y	
INMM	Ronald Knief (NCSCC)	Y	
INPO		?	
HPS	Christopher Gramham (SRACC)	Y	
JCNRM/SCoRA	Stanley Levinson (SB)	Y	
NCRP		?	
NEI		N	Needs assignment
NFPA		?	

Acronyms

ACI: American Concrete Institute
AGS: American Glovebox Association
AIChE: American Institute of Chemical Engineers
AISC: American Institute of Steel Construction
ANSI: American National Standards Institute
ASCE: American Society of Civil Engineers
ASTM-C26: American Society for Testing and Materials-C26 Nuclear Fuel Cycle
EPRI: Electric Power Research Institute
HPS: Health Physics Society
IEEE/NPEC: Institute of Electrical and Electronics Engineers/Nuclear Power Enginnering Committee
INMM: Institute of Nuclear Materials Management
INPO: Institute of Nuclear Plant Operations
ISO: International Organization for Standardization
JCNRM/SCoRA: Joint Committee on Nuclear Risk Management/SubCommittee on Risk Application
NCRP: National Council on Radiation Protection
NEI: Nuclear Energy Institute
NFPA: National Fire Protection Association