American Nuclear Society

MINUTES

Standards Board (SB)

June 19, 2018
Marriott Philadelphia Downtown

Members Present:
Steven Arndt (Chair), U.S. Nuclear Regulatory Commission
Donald Eggett (Vice Chair), Individual
John Fabian (Secretary Pro Temp), American Nuclear Society
†Patricia Schroeder (Secretary), American Nuclear Society
Russell Bell (Liaison), Nuclear Energy Institute
†Robert Budnitz, Lawrence Berkeley National Laboratory
Gene Carpenter, U.S. Department of Energy
†George Flanagan, Oak Ridge National Laboratory
David Hillyer, Energy Solutions
N. Prasad Kadambi, Individual
†Mark Linn, Oak Ridge National Laboratory
†John Nakoski, U.S. Nuclear Regulatory Commission
†James O'Brien, U.S. Department of Energy
†William Reuland (Observer), Individual
†Ruth Reyes-Muldonado (Observer), U.S. Nuclear Regulatory Commission
Andrew Smetana, Savannah River National Laboratory
Andrew Sowder, Electric Power Research Institute
†Donald Spellman, Individual
†Steven Stamm, Individual
William Turkowski, Westinghouse Electric Company, LLC
†Edward Wallace, Individual
Larry Wetzel, BWXT, Inc.

†Participated by teleconference for at least part of the time

Guests:
Robert Busch, University of New Mexico
Stefani Buster, Consortium for Nonproliferation Enabling Capabilities
Matthew Denman, Sandia National Laboratories
John Kelly (ANS President-Elect), Individual

Members Absent:
Amir Afzali, Southern Company
Carl Mazzola, Project Enhancement Corporation
Charles (Chuck) Moseley, Jr., Individual

1. Welcome and Introductions

Standards Board (SB) Chair Steven Arndt called the meeting to order and introductions were made. A quorum was established.

2. Approval of Agenda

Steven Arndt directed members to the provided agenda. He stated that he would stick as closely as possible to the agenda to finish on time. The agenda was approved as presented with the flexibility to move discussion items as needed to accommodate schedules.

3. Standards Board Chair Report

- Report from ANS President's Special Session
  Steven Arndt reported on the ANS President's Special Session held the previous day. He stated that there were several interesting and informative discussions. The session included discussions on five topics that ANS President Robert Coward believes the nuclear community will need to focus on to ensure there is a bright future for nuclear energy including 1) attracting private investment, 2) accelerating the development of advanced nuclear, 3) ensuring that nuclear is recognized as a way to fight climate change, 4) creating a diverse workforce capable of tackling tomorrows issues, and 5) building political support for nuclear energy. To be successful, all factions of ANS will need to work together. Lastly Arndt informed members that there will probably be changes to ANS's committee and division structures in an effort to make the Society more efficient.

- Report to the Board of Directors (Attachment 1)
  Arndt will make a brief presentation to the ANS Board of Directors on Thursday – See Attachment 1. He briefly reviewed the slides explaining what he plans to address. Arndt will make sure to let the Board of Directors know that the Standards Board is being proactive and that standards are an important part of what the Society does. Donald Eggett suggested that Arndt emphasize the positives of the recent Advanced Reactors Standards Needs Workshop jointly held by ANS and the U.S. Nuclear Regulatory Commission (NRC). Arndt agreed with this recommendation.

- ANS/NRC Advanced Reactor Standards Needs Workshop Report (Attachment 2)
  Arndt reported that the ANS/NRC Advanced Reactor Standards Needs Workshop was very successful. There were a number of takeaways. All technology groups felt that the lack of standards would not keep them from progressing but would be beneficial. They expressed a need for quality assurance standards, better coordination of high-level standards, and would like to see more risk-informed and/or performance-based requirements in the standards. Arndt added that what is coming out of NRC is consistent with these takeaways. We will need to coordinate work with other standards development organizations and plan for the upcoming NRC Standards Forum.

  Ruth Reyes-Maldonado confirmed that the date of September 12, 2018, is being considered for the next NRC Standards Forum but that it has not been finalized. Members want to make sure that there is follow up to the actions and outcomes from the workshop. Arndt stated that we need to work with incoming ANS President John Kelly and his special committee to find a way for ANS to take the appropriate lead. Eggett suggested that the Standards Board needs to do something in parallel so that we are ready. Arndt agreed and suggested formation of a small committee to develop a proposal that could be implemented once the president's special committee issues their plan.

ACTION ITEM 6/2018-01: Donald Eggett, Prasad Kadambi, Andrew Sowder, and William Turkowki 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. DUE DATE: August 31, 2018

- Appreciation to Members with Terms Expiring
  Arndt expressed appreciation to outgoing members Prasad Kadambi and Charles Moseley. Both have been members for several decades and were acknowledged for their incredible work.

- General Comments
  NRC has written SECY-18-0060, "Achieving Modern Risk-Informed Regulations" (available here) recommending a transitional program at the NRC. Arndt recommends that everyone

read the SECY paper. It focuses on the use of risk-informed methods and changes in the culture of the agency. The SECY paper includes a whole section on advanced reactors. It looks at concepts of risk informing Part 50.59. The paper also recommends that the NRC be more proactive in risk taking with new technology. It explicitly states that new methods should be explored to approve new technologies. Finally, the SECY paper may take quite a while to be approved and, as a result, the outcome won't be known until this time. Implementation could have important impacts for the industry as a whole. Thus, it is important that we watch this and be proactive.

Russell Bell reiterated that the SECY paper is a big deal. The Nuclear Energy Institute (NEI) has formed a team to review and determine how to handle the SECY. They are concerned that it may be a little too much too soon. Arndt recognized potential positives and negatives. Robert Budnitz added that the Joint Committee on Nuclear Risk Management (JCNRM) issued a trial-use standard for advanced non-light water reactors (LWRs) in 2013. The standard had eight pilots and is currently being finalized for a formal committee ballot to seek approval of the American National Standards Institute (ANSI). The word needs to be spread that the standard exists and is available for use.

4. SB Vice Chair Report

- Standards Service Award (SSA) Selection Committee Report

o Concurrence of 2018 Nominee
Donald Eggett led the Standards Service Award Selection Committee with support from Robert Budnitz, Chuck Moseley, and Steven Stamm. The selection committee was unanimous in their decision to select Robert Busch as the 2018 SSA recipient. Eggett read the citation citing Busch's contributions. Budnitz added that the selection committee had numerous worthy candidates that were considered. The following motion was made:

MOTION:
To approve Robert Busch as the recipient for the 2018 SSA Award

The motion was unanimously approved.

o Appointment of 2019 Selection Committee
In accordance with the policy on selecting the SSA recipient, Donald Eggett, as Standards Board vice chair, will lead the 2019 selection committee. Offers from Robert Budnitz, Gene Carpenter, Steven Stamm, and Larry Wetzel to participate on the selection committee were accepted.

- General Vice Chair Comments
Eggett recognized positive improvements in consensus committee performance in the last year. With two years of data available, changes to the metrics should be considered to be more realistic. Eggett noted that this will be discussed in more detail under a separate agenda item. He also reiterated the importance of following the progress on standards deemed of priority as identified in the priority survey from a few years back. He also questioned whether there should be any changes in priorities as a result of industry changes as well as the move to develop risk-informed and performance-based guidance. Eggett will take it one step further to communicate via email with Standards Board member on priorities.

ACTION ITEM 6/2018-02: Donald Eggett to contact Standards Board members on possible changes to industry priorities for standards development.
DUE DATE: November 1, 2018

5. Secretary/Sales Report (Reports Combined – Attachment 3)

Pat Schroeder summarized the staff and sales report. See Attachment 3 for full details. Arndt asked for an agenda item to be added to the winter meeting to further discuss the volunteer database. Steven Stamm asked for an update of the Workspace/Higher Logic platform merger in three months.

ACTION ITEM 6/2018-03: Pat Schroeder to add an agenda item to discuss the volunteer database at the 2018 winter meeting. DUE DATE: November 1, 2018

ACTION ITEM 6/2018-04: Pat Schroeder to provide Standards Board members a 3-month update on the Workspace/Higher Logic platform merger. DUE DATE: September 15, 2018

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6. ANS President (Leadership) Address

ANS Vice President/President Elect John Kelly addressed the Standards Board. He expressed appreciation to Standards Board members for their contributions. He sees the need for all to work together to establish regulatory framework for advanced reactors and would like for ANS to take the lead. The ANS/NRC Advanced Reactor Standards Needs Workshop held on May 2 was a great start. Kelly plans to continue with the Grand Challenge initiated by past ANS President Andrew Klein and the operational work of current ANS President Robert Coward when he takes over. Personally, he is looking to 1) emphasize developing future leadership, 2) increase cross organizational communication using his president's column, and 3) form a special committee on advanced reactors to determine ANS's place.

Kelly is working with ANS to develop an educational package for K-12 schools. The educational package will include a virtual tour of a plant led by young members. Donald Eggett informed Kelly of the ANS Standards Committee Associate Member Program explaining that we have experienced some challenges keeping some associates engaged. ANS is looking at other changes to encourage young member participation.

7. Consensus Committee Balance of Interest Certification (Attachment 4)

Balance of interest reports were reviewed for all eight consensus committees. Members expressed concern with multiple votes from Jensen Hughes, General Electric, and Westinghouse on the JCNRM. Robert Budnitz explained that the merger of the ANS and ASME consensus committees resulted in multiple votes from the same organization. Multiple votes from the same organization are permitted by ASME rules and were deemed acceptable by the Standards Board when the committees initially merged. Multiple votes from the same organization were expected to be reduced naturally by attrition over time; however, employment changes and company mergers have resulted in additional votes from the same company. Members discussed exceptions for multiple votes from the same company on other consensus committees approved in previous years. Classifying WECTEC separately from Westinghouse was questioned. While a division of Westinghouse, it is recognized that WECTEC provides a different service and was in a different interest classification.

Steven Stamm's philosophy is not to vote on JCNRM's balance of interest report as it does not comply with ANS policies and procedures. Budnitz argued that regardless of multiple votes from

the same company, the JCNRM balance of interest report is in balance. Motions were made separately for all consensus committees and approved as follows:

Environmental & Siting Consensus Committee (ESCC) – approved unanimously

Fuel, Waste, and Decommissioning Consensus Committee (FWDCC) – approved unanimously

Joint Committee on Nuclear Risk Management (JCNRM) – approved with one negative from Stamm

Large Light Water Reactor Consensus Committee (LLWRCC) – approved unanimously

Nuclear Criticality Safety Consensus Committee (NCSCC) – approved unanimously

Nonreactor Nuclear Facilities Consensus Committee (NRNFCC) – approved unanimously

Research and Advanced Reactors Consensus Committee (RARCC) – approved unanimously

Safety and Radiological Analyses Consensus Committee (SRACC) – approved unanimously

Steven Arndt recognized that multiple representation will always be a challenge as volunteers change employers and companies merge. He thought that a policy may need to be created or revised to address these situations. A suggestion was made for a small group to be appointed to prepare a few recommendations with pros and cons to address multiple representation. Recommendations should be confirmed with ANS staff that they are consistent with ANSI requirements. The small group should also consider the recommendation to approve balance of interest outside of a meeting by e-ballot. Robert Budnitz, Donald Eggett, William Turkowski, and Larry Wetzel offered to support Steven Stamm as lead. Budnitz asked that Rick Grantom, the ASME co-chair of JCNRM, be included in the discussion unofficially.

ACTION ITEM 6/2018-05: Donald Eggett, Robert Budnitz (Rick Grantom), Gene Carpenter, William Turkowski, and Larry Wetzel with Steven Stamm as lead to review the policy on multiple representation and provide recommendations for potential changes in compliance with ANSI requirements. Teleconference to be held to finalize recommendations for presentation to the Standards Board at the November 2018 meeting.
DUE DATE: November 1, 2018

8. Standards Committee Strategic Plan Report

- Progress on Goals & Objectives--SMART Matrix (Attachments 5)
  Steven Stamm stated it was disheartening that there was little progress on the goals and objectives. Many actions have not been completed because the lack of an External Communications Task Group chair and the slow progress made by the Risk-informed, Performance-based Principles and Policy Committee (RP3C) (Goal 1.D). Stamm reviewed each action. David Hillyer conceded that the FWDCC has not fully maximized the use of Workspace (Goal 3.D). When discussing funding of high-priority standards (Goal 3.E).

  Arndt stated that he hasn't been proactive in gaining industry input to establish priority standards (Goal 4.A). Workshops like the one recently held for advanced reactor standards needs may be one avenue. Stamm suggested an advisory committee of senior management personnel may be one option to be considered. Donald Spellman offered to serve as External Communications Task Group Chair if no one else was able to do so; Arndt will consider.

Kadambi said that the RP3C Operating Plan is complete with the understanding that the timeframe is to be determined. With members needing time to review, Arndt asked that a formal ballot be issued with the due date of July 3, 2018. The ballot was issued during the meeting.

Kadambi asked that the due dates for RP3C actions under Goal 1.D be revised to December of 2019 explaining that RP3C needs inputs from consensus committees to complete these actions. The schedule for completion of several objectives is contingent on this input. Stamm will review the wording and reflect the need for completions of other items.

ACTION ITEM 6/2018-06: Steven Stamm to update the SMART Matrix as discussed during the June 19, 2018, Standards Board meeting.
DUE DATE: August 1, 2018

- Consensus Committee 2017 Performance Evaluation/Potential Changes (Attachment 6 - 9)
  Stamm directed members to the consensus committee performance evaluation. He noted that meeting participation has improved but that no consensus committee has met the criteria for "category good." Considering experience over the last two years, he doesn't believe the threshold is realistic. Stamm suggested changing the criteria for meeting participation for "good" to 75% and above with "fair" from 55%-74% and poor less than 55%. Members accepted the recommendation to reduce the meeting participation criteria. The metric for consensus committee balloting was discussed and the possibility of lowering the metrics. Members felt that responding to ballots is a primary responsible of membership and expected. The sentiment of the members was to keep the criteria the same. The following motion was made:

  MOTION:
  To accept the suggestion to change the criteria for meeting participation to 75% and above for good, fair from 55%-74%, and poor less than 55% with the balance of the consensus committee metrics to remain the same.

  The motion was approved unanimously.

9. Current Issues

- 2018 NRC Standards Forum Report & Actions Needed (See Attachment 10)
  Steven Arndt reviewed the items that need to be addressed before the next NRC Standards Forum provided as Attachment 10. He stated that an offline discussion will be needed to prepare for the forum.

ACTION ITEM 6/2018-07: Steven Arndt to organize an offline discussion to prepare for the next NRC Standards Forum.
DUE DATE: August 1, 2018

- Recognition of Standards Committee Work on Industry Issues
  The importance was recognized but no discussion held.

- Possible New Performance-Based Standard on Advanced Manufacturing Techniques (e.g., additive manufacturing)

Russell Bell updated members on industry's current work on additive manufacturing. There are a number of standards development organizations that have created a roadmap for working on additive manufacturing. The NRC hosted a vendor workshop and a large portion of the agenda was dedicated to additive manufacturing. Sowder added that ASME's code space already deals with many aspects of additive manufacturing.

Members questioned whether there was a place for an ANS standard on additive manufacturing or whether it could be incorporated in a revision of a current standard. If anywhere, members thought that LLWRCC standards may be an area that could incorporate additive manufacturing techniques. Gene Carpenter was asked to review the committee's standards for potential projects that could incorporate additive manufacturing.

ACTION ITEM 6/2018-08: Gene Carpenter to review LLWRCC standards for potential revisions/projects that can incorporate additive manufacturing.
DUE DATE: November 1, 2018

- Assignment of ANS standards for small modular reactors used by LWRs
  (i.e., ANS-30.3, "Advanced Light Water Reactor Risk-Informed Performance-Based Design Criteria and Methods")
  The LLWRCC questioned the assignment of a standard for SMRs to the LLWRCC instead of the RARCC. Gene Carpenter will discuss with George Flanagan offline.

ACTION ITEM 6/2018-09: Gene Carpenter to discuss assignment of standards for SMRs (i.e., ANS-30.3) to LLWRCC instead of RARCC with George Flanagan on cases where a single standard should be applicable to both large LWRs and light water SMRs.
DUE DATE: August 15, 2018

- Pressurized Water Reactor Owners' Group (PWROG) Standards Priorities/Needs
  William Turkowski stated that he was asked to provide information to the PWROG about ANS standards. He provided a list of ANS standards and projects to the PWROG as well as staffing needs. It is his understanding that the PWROG will provide their feedback to the NEI. He will share the feedback when available.

- DOE Criticality Safety Support Group (CSSG) Requests (Attachments 11-14)
  Larry Wetzel explained that two requests were recently submitted from the CSSG related to nuclear criticality safety standards. One request asked for an over-arching philosophy addressing risk/benefit considerations to be included in nuclear criticality safety standards. The second request asked for vetting of nuclear criticality safety guidance incorporated in ANS standards outside of the NCSCC's purview.

  Wetzel explained that presently he sees PINS from other committees but does not review draft standards. A PINS may not provide enough information to identify cross disciplines. Wetzel prepared a proposal to allow an opportunity for a multi-consensus committee review for projects with overlapping scopes.

  Members discussed Wetzel's proposal to provide all consensus committees an opportunity to review any draft standard in parallel to the consensus committee ballot. The new procedure would provide consensus committee chairs a 15-day period to review a draft and determine if the draft was relevant to their committee's scope. Upon request, the draft would be issued to their consensus committee for a 45-day review. Concern was expressed that the consensus committee ballot stage may not be the best time for extra comments from a second consensus committee. A request was made that comments be consolidated by the consensus committee chair to ensure that they represent the consensus committee's view. As an alternate, the draft

could be provided to the secondary consensus committee at the subcommittee level for those consensus committees that have subcommittees. The following motion was made:

MOTION:
To approve the proposal for an opportunity of a multi-consensus committee review as presented in Attachment 13 with the change to the Standards Committee Procedures Manual as provided in Attachment 14.

The motion was approved unanimously.

ACTION ITEM 6/2018-10: Pat Schroeder to update the Standards Committee Procedures Manual to reflect the approved revision and implement the change as proposed on Attachment 14.
DUE DATE: July 1, 2018

Robert Busch happened to stop by the Standards Board meeting at this time and was informed of his being selected for the 2018 Standards Service Award. Donald Eggett read the citation to Busch and expressed appreciation to him on behalf of the entire Standards Board.

10. Professional Division (PD)/Standards Committee (SC) Liaisons Program (Attachment 15)

William Turkowski reminded members that the liaison program with ANS Professional Divisions (PD) was initially instituted by Carl Mazzola several years ago under a previous consensus committee. The program was resurrected to harvest resources of ANS PDs and to facilitate communication. Turkowski prepared a presentation with the program details and has given the presentation a number of times. He'll be following up with the new PD Committee chair, Thomas Remick, to reinforce the program. As division leadership may change after the annual meeting, liaisons will be reconfirmed. Steven Arndt added that the incoming President John Kelly is very supportive of this effort. Turkowski will send the PD liaison program presentation and liaison list to Remick.

ACTION ITEM 6/2018-11: William Turkowski to send PD Committee Chair Thomas Remick the PD liaison program presentation and updated liaison list.
DUE DATE: July 1, 2018

ACTION ITEM 6/2018-12: Pat Schroeder to check with PD Committee Chairs for changes to PD liaisons as a result of division leadership changes after the June meeting and update the PD/SC liaison list accordingly.
DUE DATE: September 1, 2018

11. Student Section/Associate Membership Report (Attachment 16)

Several consensus committee chairs shared feedback from associate members that the standards process moved too slowly. Additionally, associate members' area of interest often changed resulting in lack of interest in their placement. The term of an associate member is recommended at two years. Chairs have flexibility in upgrading an associate member to a full voting member because of the varying experience each brings to the working group. Members agreed that this program was very important and needs to be promoted by members.

12. Review of Open Action Item Report (Attachments 17 & 18)

Open action items were reviewed. A 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 6/2018-13: Donald Eggett to contact the ANS Student Conference chair for the upcoming Student Conference April 2019 at Virginia Commonwealth University to explore opportunities for a standards presentation assuming that an ANS standards representative can attend the conference.
DUE DATE: September 1, 2018

ACTION ITEM 6/2018-14: Pat Schroeder to develop a spreadsheet and work with consensus committee chairs to track consensus committee decisions on the 23 standards identified in the RP3C categorization effort.
DUE DATE: August 1, 2018

13. RP3C Report

- RIPB Operating Plan Status (Attachment 19)
- RIPB Guidance Document Status (Attachment 20)

RP3C Chair Prasad Kadambi reported on yesterday's RP3C meeting. Kadambi submitted a report (available as Attachment 21). He stated that the RP3C Operating Plan is ready for balloting by the Standards Board with the understanding that the schedule is being defined and will be added at a later date. Kadambi will use a SMART Matrix to track RP3C progress. Kadambi thought that the discussion he will have related to RP3C actions on the SMART Matrix would help to define the schedule.

The guidance document was provided to members for review and will be finalized with input from lessons learned. RP3C also discussed the changing environment and the need to get back to basics. The work on the Licensing Modernization Project (LMP) will be submitted to the NRC, and the NRC will issue a Regulatory Guide (RG) to incorporate this work.

Ed Wallace addressed the members. He was calling in because he attended the Advisory Committee on Reactor Safeguards (ACRS) subcommittee meeting on this same subject, that being RIPB methods. There were two presentations at the ACRS subcommittee meeting driven by the LMP and led by Amir Afzali. Wallace offered to share the presentations with members.

ACTION ITEM 6/2018-15: Ed Wallace to provide Pat Schroeder the two presentations made to the ACRS subcommittee on the LMP for distribution to the Standards Board.
DUE DATE: July 1, 2018

Wallace informed members that William Reckley provided the ACRS subcommittee background on the proposed new RG that will incorporate the LMP. The draft RG is expected to be completed by September for review by the ACRS subcommittee at their October meeting. A SECY paper will be developed before the RG. The RG should be issued for public comment by the end of this year. Hopefully the RG will be published by the end of 2019. The applicability was recognized to the LWR communities for those thinking of operation beyond 60 years. The process is directed to advanced LWRs although he would not restrict to power reactors.

14. Consensus Committee Chair Reports

A. Environmental and Siting Consensus Committee (ESCC) (Attachment 22)

ESCC Chair Carl Mazzola was not able to attend the meeting. See the written report provided as Attachment 22 for current ESCC activities.

B. Fuel, Waste, and Decommissioning Consensus Committee (FWDCC) (Attachment 23)
FWDCC Chair David Hillyer reported on the FWDCC meeting held the previous day. The consensus committee is exploring the possibility of resurrecting several withdrawn standards. Hillyer explained that he had a number of individuals that volunteered quickly to work on decommissioning standards but that getting these individuals to engage and especially to take on leadership roles has been found to be a challenge. Hillyer has enlisted all FWDCC members to help. A committee teleconference is being scheduled for the end of July.

C. Joint Committee on Nuclear Risk Management (JCNRM) (Attachment 24)
JCNRM Co-Chair Robert Budnitz reported for the JCNRM. The membership of the JCNRM consensus committee is at about 34 members with well over 100 volunteers participating at all committee levels. The JCNRM has a good deal of interest in membership from young professionals and has succession plans in place. The next edition of the flagship standard (Level 1 large early release frequency) has been an all-consuming task. The committee is working towards a ballot well before the end of the year. An update to the seismic portion of the standard was issued as a Case which was endorsed by the NRC in a concurrence letter. The Case is currently being used by several utilities. The non LWRs trial-use standard was published a number of years ago. Findings from eight different pilots are being incorporated. The advanced LWR standard is very close to going out for ballot for release as a trial-use standard. Budnitz reported that there have been no conflicts between ANS and ASME. The committee has had a succession of grants over the last two decades used to reimburse volunteers without support and some administrative costs. Budnitz reported on two international working groups (IWGs) from China and Japan. The IWGs review drafts at ballot and provide consolidated comments. The Canadians and Koreans are also considering forming an IWG with the JCNRM.

D. Large Light Water Reactor Consensus Committee (LLWRCC) (Attachment 25)
LLWRCC Chair Gene Carpenter summarized his written report. An update was provided on the new cybersecurity standard designated ANS-3.15. The working group has added several key members, just held a meeting, and has a teleconference scheduled. Steven Arndt reiterated the importance of the cybersecurity standard and the need to coordinate with Electric Power Research Institute, NEI, and others as there are many moving parts. We need to make sure we don't have conflicts and that we are adding value. Arndt would appreciate quarterly reports on the status and coordination efforts of this standard.

Budnitz informed members that the JCNRM has been discussing the possibility of developing a guidance document on how to use probabilistic risk assessment (PRA) methods for cybersecurity people to go about their work in a prioritized way. A few teleconferences have been held. A small meeting of about 10-12 experts has been proposed to further explore the possibility of a guidance document. Both societies' standards boards will be asked for approval before initiating a guidance document. Budnitz asked Carpenter to keep him informed of the progress on ANS-3.15 and to include Gerry Kindred as well.

ACTION ITEM 6/2018-16: Gene Carpenter to keep Steven Arndt, Robert Budnitz, and Gerry Kindred informed of progress on ANS-3.15 (cybersecurity standard) on a quarterly basis. DUE DATE: September 15, 2018

Carpenter recognized other new projects being initiated. Russell Bell, as the NEI representative, reiterated the sentiment that the proposed new standard ANS-3.14 (reliability

assurance program) is not needed. Carpenter stated that the LLWRCC will discuss the project at their next meeting and give consideration to this viewpoint. Bell recognized the proposed new standard ANS-60.1 (export control standard) of interest and asked that NEI be included on the working group.

ACTION ITEM 6/2018-17: Pat Schroeder to provide Russell Bell ANS-60.1 Working Group Chair Margaret Harding's contact information so that they can discuss NEI's participation. DUE DATE: July 1, 2018

Lastly, Carpenter reported that the revision of ANSI/ANS-3.5-2009 (simulators use in operator training and examination) has seen some delays in resolving comments. One concern expressed by a few LLWRCC members is that changes in the revision may not be acceptable to the regulator and that it may not be endorsed. Arndt was concerned with this possibility as well. It is expected that the draft will be resubmitted for ballot soon.

E. Nonreactor Nuclear Facilities Consensus Committee (NRNFCC) (Attachment 26)
NRNFCC Chair James O'Brien was out of the country. He called into the meeting earlier but had difficulties with the connection in the afternoon. In addition to his written report, he forwarded the following update via email read by Pat Schroeder:

> *I don't have much to report on the NRNFCC. The latest is that the ANS-57.11 Working Group (integrated safety assessment) is meeting for four days next week to see if they can agree on a path forward to finish the standard and make progress. The ANS-3.14 Working Group (aging management) is proceeding. Maintenance of ANSI/ANS-58.16-2014 (safely classification of nonreactors components) is being addressed with a new working group lead.*

F. Nuclear Criticality Safety Consensus Committee (NCSCC) (Attachment 27)
NCSCC Chair Larry Wetzel summarized his written report. A number of standards are making good progress. They had one opening for a working group chair which was filled at this meeting. Wetzel confirmed that he has coached members on their participation and believes increased participation is reflective.

G. Research and Advanced Reactors Consensus Committee (RARCC) (Attachment 28)
RARCC Chair George Flanagan reported that a number of standards are under development and provided updates were available. ANS-30.2 (categorization of SSCs for new plants) will make use of the LMP. Mark Linn reported that ANS- 30.1 (integrating risk and performance objectives for new plants) has been a difficult project. Its current structure directly links to the use of ASME/ANS RA-S-1.4-2013 (PRA for advanced non-LWRs) to ensure consistency of generated PRA documentation as the plant design process. He is currently socializing the standard with a few others and targeting to have a draft ready for committee review by November 2018. The standard will emphasis the philosophy and methods of PRA and will be more performance based than risk informed.

Flanagan recognized that the RARCC has no delinquent standards, no inquiries, and no staffing needs. He speculated that poor ballot participation was due to the split scope of the committee.

H. Safety and Radiological Analyses Consensus Committee (SRACC) (Attachment 29)
SRACC Chair Andrew Smetana reported that the SRACC has a few PINS in development and several projects in works. He recognized that the committee has a few delinquent standards. One will be allowed to be withdrawn as previous discussed. Discussions with

members and the subcommittee chair have come to the conclusion that ANSI/ANS-41.5-2012 (radiological data in waste management and environmental remediation) does not fit within the committee's scope, and he is looking for reassignment. Smetana believed that the committees varied scope is a factor contributing to poor ballot participation. He has instructed members to vote abstained when a standard is outside of their technical area to improve ballot participation. Meeting attendance is a struggle with so many members not able to travel.

ACTION ITEM 6/2018-18: Andrew Smetana to review consensus committee scopes to determine if another consensus committee may be a better fit for ANSI/ANS-41.5-2012, "Verification and Validation of Radiological Data for Use in Waste Management and Environmental Remediation," for potential reassignment. DUE DATE: August 1, 2018

15. Other Committee Reports

- Standards Board Task Groups (TG) (TG List/Scopes – Attachment 30)

o Policy Task Group--—Chair: Steven Arndt
Steven Arndt recognized that the Policy Task Group has not been very active. He believes that policy issues were handled well at the meeting today. Arndt urged members to bring forward policy issues that need to be addressed.

o External Communications Task Group--—Chair: Open
Arndt recognized that the External Communications Task Group Chair position was open. He expects to appoint a chair for this task group shortly.

o Internal Communications Task Group—Chair: William Turkowski
William Turkowski reported on the Internal Communications Task Group's major effort under the PD/SC liaisons program agenda item.

- External Liaison Reports to the Standards Board (Full Liaison List – Attachment 31)

o American National Standards Institute (ANSI) & International Organization of Standardization (ISO)/Technical Committee (TC) 85/Subcommittee (SC) 6—Liaison: Prasad Kadambi
Prasad Kadambi stated that he did not have much to report as he circulates updates when received. He informed members that ISO-19443:2018, "Quality Management Systems—Specific Requirements for the Application of ISO 9001:2015 by Organizations in the Supply Chain of the Nuclear Energy Sector Supplying Products and Services Important to Nuclear Safety (ITNS)," is meant to be a quality management standard that will be applicable to nuclear vendors and suppliers. He sees this as a big deal in the international arena. The ISO standard had participation of DOE, ASTM, and IEEE.

o American Society of Civil Engineers (ASCE)—Liaison: Carl Mazzola
No report provided

o Electric Power Research Institute (EPRI)—Liaison: Andrew Sowder
No report provided.

- Institute of Electrical and Electronics Engineers (IEEE)/Nuclear Power Engineering Committee (NPEC)—Liaisons: Donald Spellman (SB liaison to NPEC)/Richard Wood (NPEC liaison to SB)
  Steven Arndt recently spoke to Richard Wood and learned that IEEE is currently looking at the cybersecurity area as well. Arndt recognized that ANS and IEEE worked on a joint standard in the past. The standard is ANS/IEEE-7.4.3.2-1982 (R1990) (W2000), "Application Criteria for Programmable Digital Computer in Safety Systems of Nuclear Power Generating Stations." Consideration may be given to future collaboration on this standard.

- Institute of Nuclear Power Operations (INPO)—Liaison: Open
  Members were asked if anyone has a contact at INPO that could help recruit an INPO liaison for the Standards Board. David Hillyer previously worked at INPO and would make some calls.

ACTION ITEM 6/2018-19: David Hillyer to make some inquiries and provide the name(s) of a potential INPO liaison to Steven Arndt.
DUE DATE: August 1, 2018

- JCNRM Subcommittee on Risk Assessment (SCoRA)—Liaison: Stanley Levinson
  Robert Budnitz reported that SCoRA and RP3C have had good interactions. The chair of SCoRA is Gerry Kindred who is a member of the RP3C.

- National Council of Radiation Protection and Measurements (NCRP)—Liaison: Open
  No report provided.

- Nuclear Energy Institute (NEI)—Liaison: Russell Bell
  Russell Bell confirmed that he circulates high-level standards activities to NEI. They are trying to cut costs to be more efficient. NEI feels that SECY-18-0060 sends the right message and are following its progress. Bell expects that NEI will provide a report to the Commission providing their opinion on the paper. He recognized that NEI lost two members and are making adjustments to budgets and staffing while keeping focus on major issues. NEI is looking at intellectual property as they are currently involved in a law suit in this area. Arndt asked that Bell take back the message that ANS is always willing to support NEI in their mission.

- National Fire Protection Association (NFPA)—Liaison: Bernie Till
  No report was provided.

- Western European Nuclear Regulators Association (WENRA)—Liaison: Robert Budnitz
  Robert Budnitz suggested that the liaison with WENRA be dropped. He explained that about six years ago the WENRA chair came to our meeting and suggested a liaison so that they could follow our work. Budnitz had been doing consulting work with them and accepted the liaison position. The Standards Board chair at the time, Donald Spellman, reciprocally attended a WENRA meeting. The last few years Budnitz hasn't gotten a response from anyone from WENRA. He believes that WENRA has been connecting with ISO and that they feel this is sufficient. Without objection, members agreed to terminate the WENRA liaison position.

ACTION ITEM 6/2018-20: Pat Schroeder to remove WENRA from the list of external liaisons.
DUE DATE: July 1, 2018

Members thought that there was value in adding additional liaisons from ISO and someone from ASME's Boiler Pressure Vessel Code. Arndt will look at other potential liaisons needed as well.

ACTION ITEM 6/2018-21: Steven Arndt to consider the need for additional external liaisons to the Standards Board. DUE DATE: November 1, 2018

16. Other Business

No other business was discussed.

17. Review of Action Items from This Meeting

New action items assigned at the meeting were reviewed.

18. Future Meetings

- ANS Winter Meeting, November 11-15, 2018, Hilton Orlando Bonnet Creek, Orlando, FL
- ANS Annual Meeting, June 9-13, 2019, Hyatt Regency Minneapolis, Minneapolis, MN

The next Standards Board meeting will be scheduled on Tuesday, November 13, 2018, during the 2018 ANS Winter meeting.

19. Adjournment

With no further business, the meeting was adjourned.

Standards Board Action Item Status Report for 6/19/18 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
6/2018-01	Donald Eggett, Prasad Kadambi, Andrew Sowder, and William Turkowki 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. DUE DATE: August 31, 2018	Eggett, Kadambi, Sowder, Turkowki	OPEN
6/2018-02	Donald Eggett to contact Standards Board members on possible changes to industry priorities for standards development. DUE DATE: November 1, 2018	Eggett	OPEN
6/2018-03	Pat Schroeder to add an agenda item to discuss the volunteer database at the 2018 winter meeting. DUE DATE: November 1, 2018	Schroeder	OPEN
6/2018-04	Pat Schroeder to provide Standards Board members a 3-month update on the Workspace/Higher Logic platform merger. DUE DATE: September 15, 2018	Schroeder	OPEN
6/2018-05	Donald Eggett, Robert Budnitz (Rick Grantom), Gene Carpenter, William Turkowski, and Larry Wetzel with Steven Stamm as lead to review the policy on multiple representation and provide recommendations for potential changes in compliance with ANSI requirements. Teleconference to be held to finalize recommendations for presentation to the Standards Board at the November 2018 meeting. DUE DATE: November 1, 2018	Stamm, Eggett, Carpenter, Budnitz, Turkowski, Wetzel	OPEN
6/2018-06	Steven Stamm to update the SMART Matrix as discussed during the June 19, 2018, Standards Board meeting. DUE DATE: August 1, 2018	Stamm	OPEN
6/2018-07	Steven Arndt to organize an offline discussion to prepare for the next NRC Standards Forum. DUE DATE: August 1, 2018	Arndt	OPEN
6/2018-08	Gene Carpenter to review LLWRCC standards for potential revisions/projects that can incorporate additive manufacturing. DUE DATE: November 1, 2018	Carpenter	OPEN
6/2018-09	Gene Carpenter to discuss assignment of standards for SMRs (i.e., ANS-30.3) to LLWRCC instead of RARCC with George Flanagan on cases where a single standard should be applicable to both large LWRs and light water SMRs. DUE DATE: August 15, 2018	Carpenter	OPEN

Standards Board Action Item Status Report for 6/19/18 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
6/2018-10	Pat Schroeder to update the Standards Committee Procedures Manual to reflect the approved revision and implement the change as proposed on Attachment 14. DUE DATE: July 1, 2018	Schroeder	OPEN
6/2018-11	William Turkowski to send PD Committee Chair Thomas Remick the PD liaison program presentation and updated liaison list. DUE DATE: July 1, 2018	Turkowski	OPEN
6/2018-12	Pat Schroeder to check with PD Committee Chairs for changes to PD liaisons as a result of division leadership changes after the June meeting and update the PD/SC liaison list accordingly. DUE DATE: September 1, 2018	Schroeder	OPEN
6/2018-13	Donald Eggett to contact the ANS Student Conference chair for the upcoming Student Conference April 2019 at Virginia Commonwealth University to explore opportunities for a standards presentation assuming that an ANS standards representative can attend the conference. DUE DATE: September 1, 2018	Eggett	OPEN
6/2018-14	Pat Schroeder to develop a spreadsheet and work with consensus committee chairs to track consensus committee decisions on the 23 standards identified in the RP3C categorization effort. DUE DATE: August 1, 2018	Schroeder	OPEN
6/2018-15	Ed Wallace to provide Pat Schroeder the two presentations made to the ACRS subcommittee on the LMP for distribution to the Standards Board. DUE DATE: July 1, 2018	Wallace Schroeder	OPEN
6/2018-16	Gene Carpenter to keep Steven Arndt, Robert Budnitz, and Gerry Kindred informed of progress on ANS-3.15 (cybersecurity standard) on a quarterly basis. DUE DATE: September 15, 2018	Carpenter	OPEN
6/2018-17	Pat Schroeder to provide Russell Bell ANS-60.1 Working Group Chair Margaret Harding's contact information so that they can discuss NEI's participation. DUE DATE: July 1, 2018	Bell, Schroeder	OPEN
6/2018-18	Andrew Smetana to review consensus committee scopes to determine if another consensus committee may be a better fit for ANSI/ANS-41.5-2012, "Verification and Validation of Radiological Data for Use in Waste Management and Environmental Remediation," for potential reassignment. DUE DATE: August 1, 2018	Smetana	OPEN

Standards Board Action Item Status Report for 6/19/18 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
6/2018-19	David Hillyer to make some inquiries and provide the name(s) of a potential INPO liaison to Steven Arndt. DUE DATE: August 1, 2018	Hillyer	OPEN
6/2018-20	Pat Schroeder to remove WENRA from the list of external liaisons. DUE DATE: July 1, 2018	Schroeder	OPEN
6/2018-21	Steven Arndt to consider the need for additional external liaisons to the Standards Board. DUE DATE: November 1, 2018	Arndt	OPEN
2/2018-03	Steven Arndt to follow up with Steven Stamm about possible suggestions for communicating standards opportunities to local sections. DUE DATE: September 1, 2018	Arndt, Stamm	OPEN Arndt confirmed that the action remains open. S. Stamm offered the following thoughts in advance of the meeting: Improving Standards Communications with Local Sections: 1) Prepare a standards presentation for Local Section Members (~30 minutes) a) Focus on potential Local Section needs (1) access (finding and obtaining standards) (2) influence (providing input, review or being WG/SC members) (3) Associate positions b) Deliver via web presentation with telecom backup c) Have at least 2 time slots so people could get to one of them d) Make this into a video that could be linked on local section websites e) Goal is to reach entire mailing list of the local sections. f) Discuss usefulness of follow-up session(s) 2) Offer Webcasts with authors of specific standards of interest to a specific section that would consist of a short summary followed by Q&A. This could be done as a dinner meeting topic. In some cases it might be possible to do this in person. 3) Offer something similar focused on student sections from key universities.

Standards Board Action Item Status Report for 6/19/18 Meeting

Action Item	Description	Responsibility	Status/Comments /Reassignments
2/2018-04	Prasad Kadambi, on behalf of RP3C, to update the draft RP3C guidance document and provide to the Standards Board before the June 2018 meeting. Per Action Item 10/2017-19, consensus committee chair comments due by February 28, 2018.	Kadambi	CLOSED Draft included with 6/19/18 meeting material.
2/2018-06	Steven Arndt and Pat Schroeder to discuss improving the process of notifying the public, utilities, and industry organizations of ANS standards development activities; possibly expanding the distribution letters to other stakeholders. DUE DATE: September 1, 2018	Arndt, Schroeder	OPEN Arndt stated that he still needs to think about how best to handle.
2/2018-08	Steven Arndt to contact Ralph Hill for more information on ASME's Board on Nuclear Codes and Standards collaborative effort to revive nuclear power in the United States. DUE DATE: August 1, 2018	Arndt	OPEN
10/2017-12	Consensus committee chairs to follow up with new liaisons when updated list available. DUE DATE: August 1, 2018	Consensus committee chairs	On going With new PD leadership starting after the annual meeting, the PD liaisons may change. Schroeder will reconfirm appointments and provide an updated list to consensus committee chairs.
10/2017-13	Donald Eggett to contact the ANS Student Conference chair for the upcoming Student Conference next April at the University of Florida-Gainesville to explore their interest and opportunity for a standards presentation.	Eggett	CLOSED A local representative could not be found to attend the 2018 student conference. A new action item is needed to start preparations for a presentation at the 2019 student conference–April 4-6 at Virginia Commonwealth University. New Action Item 6/2018-13 was opened for Eggett to work on finding a representative to attend the 2019 conference and placement on the conference agenda.
10/2017-14	Steven Arndt and Donald Eggett to work with the ANS Professional Divisions ~~consensus committee chairs~~ to establish an annual process to identify opportunities and representatives to make presentations at ANS meetings ~~topical meetings, conferences, and local sections~~ to encourage standards participation. DUE DATE: September 1, 2018	Arndt & consensus committee chairs	OPEN Arndt explained that he would like to reach out to the PDs as opposed to tracking down topical meetings. Eggett will assist Arndt in this effort. The action item was amended as shown in the description (see to the left) according to this discussion at the 6/19/18 meeting.

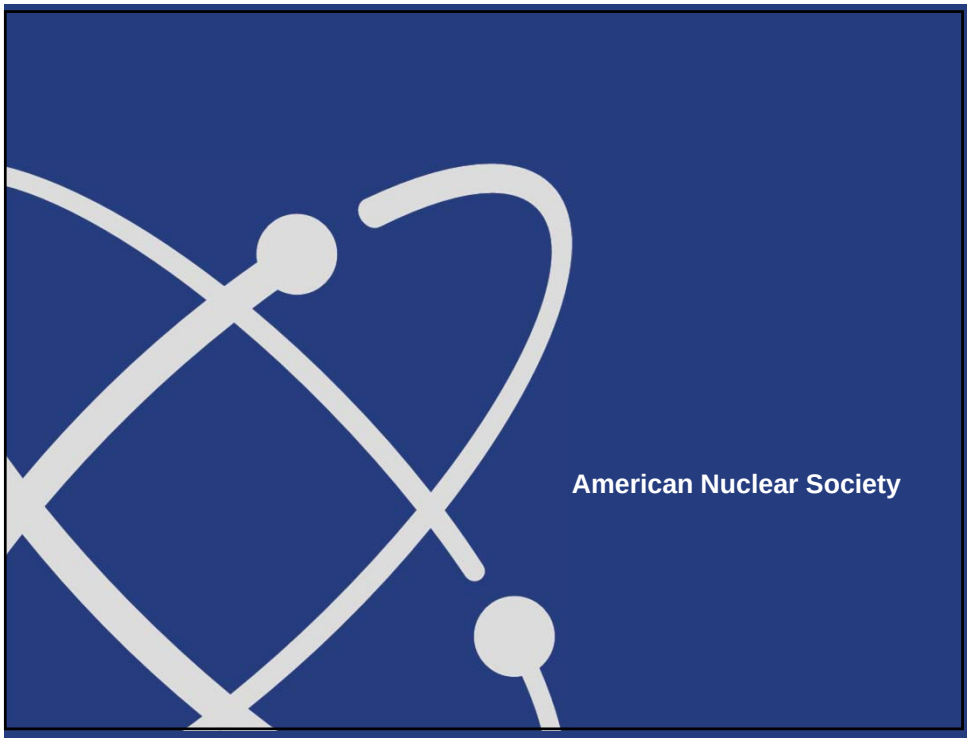
Standards Board Action Item Status Report for 6/19/18 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
10/2017-19	Consensus committee chairs to review the RP3C categorization spreadsheet of standards and projects recommended to incorporate RIPB methods and develop a path forward with priorities. Consensus committee plans (including variances from the recommendations) to be reported back to the SB and RP3C. (The list includes projects under ESCC, FWDCC, LLWRCC, NRNFCC, and RARCC.) DUE DATE: September 1, 2018	ESCC, FWDCC, LLWRCC, and RARCC chairs NA for NRNFCC as NRNFCC standards part of operating plan and working w/RP3C.	OPEN Kadambi recognized communications with LLWRCC & NCSCC. ESCC provided a response 3/22/18. Hillyer confirmed that the FWDCC is reviewing the two standards identified and will have a decision soon. While no SRACC or NCSCC standards were identified, both chairs stated that some of their standards use PB methods, not RI. Action Item 6/2018-14 was assigned for Schroeder to prepare a tracking report to gather input from all consensus committee chairs.
10/2017-20	Consensus committee chairs to review the draft RP3C guidance document and submit any comments to Prasad Kadambi and Pat Schroeder.	Consensus committee chairs NA for NRNFCC as chair is helping to write guidance. Responses needed from: • FWDCC	CLOSED Comments provided.
10/2017-21	Carl Mazzola to work with Jennifer Call (Siting: Atmospheric Subcommittee Chair) to determine the direction and need of proposed new standard ANS-3.16, “Meteorological Aspects of Wildland Fire Response.” DUE DATE: November 1, 2018	Mazzola	In progress A questionnaire was prepared and sent to the Nuclear Utility Meteorological Data Users Group and DOE Meteorological Coordinating Council members for feedback on the need for proposed new standard ANS-3.16, “Meteorological Aspects of Wildland Fire Response.” The industry is not convinced that a standard is needed. The ESCC is evaluating this feedback.
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.” DUE DATE: September 1, 2018	Carpenter	OPEN Carpenter confirmed outreach made 3 times but not getting response. He will try again.
10/2017-27	Gene Carpenter to solicit the following for the ANS-3.15 Working Group on cybersecurity: 1) NRC representative 2) DOD representative 3) Additional leadership	Carpenter	CLOSED Sufficient support found. WG held meeting last Sunday and call scheduled next month.

Standards Board Action Item Status Report for 6/19/18 Meeting

Action Item	Description	Responsibility	Status/Comments /Reassignments
10/2017-28	Steven Arndt to set up a meeting with Russ Bell and senior NEI leaders. DUE DATE: August 1, 2018	Arndt	OPEN Arndt to initiate call in July.
06/2017-04	Steven Arndt to review the chair and members for all of the TGs and solicit/adjust as appropriate (scopes/member lists – Attachment 3 of 6/13/17 minutes). Specific actions discussed include the following: • Solicitation of new External Communications TG Chair • Add Amir Afzali as a member of the External Communications TG	Arndt	CLOSED
06/2017-16	RP3C to issue their operating plan with inclusion of the following: • RP3C action item to categorize all ANS standards and projects (i.e., current, withdrawn, active, inactive) into one of three categories -- RIPB, PB, or not applicable. • Implementation of RIPB principles in ANS-3.14, "Process for Aging Management and Life Extension of Nonreactor Nuclear Facilities," and ANS-58.14, "Safety and Pressure Integrity Classification Criteria for Light Water Reactors." • SB decisions on ANS Executive Committee inputs	RP3C Kadambi, Wallace	CLOSED Draft plan provided to SB with 6/19/18 meeting materials and issued for ballot.
06/2017-18	The Policy TG to determine how the statement on standards development drafted by Robert Busch is addressed. DUE DATE: September 1, 2018	Arndt/ Policy TG	OPEN The statement and SB comments on the statement are accessible here.
11/2016-08	Prasad Kadambi to work with Steven Arndt on preparing a conformity assessment business case.	Kadambi	CLOSED Members were not in agreement that a conformity assessment program was an appropriate direction for ANS. It would be a change of scope requiring BOD approval.
6/2016-03	Russell Bell to help coordinate ANS work on advanced reactor standards with other SDOs and industry. Due Date: On-going	Bell/NEI Liaison	On-going
6/2016-14	External Communications Task Group to evaluate and improve the process of notifying the public and NEI/utilities of standards development activities. Due Date: On hold	ECTG & Arndt	On hold until new task group chair is appointed

Standards Board Action Item Status Report for 6/19/18 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
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. Due Date: November 1, 2018	Carpenter	OPEN G. Carpenter confirmed that the LLWRCC has reviewed the standards ranked 11-20 and will continue to review their progress.
11/2015-21	The LLWRCC to approve a PINS for a cybersecurity standard and forward to the standards manager. DUE DATE: September 1, 2018	Carpenter	OPEN WG making progress and PINS should be issued by next meeting.

ATTACHMENT 1



American Nuclear Society

Standards Board Chair Presentation to the ANS Board of Directors

2018 ANS Annual Meeting
Marriott Philadelphia Downtown

2

American Nuclear Society

Standards-Related Activities and Initiatives

Report of major activities, accomplishments and strategic initiatives including

- Advanced Reactor Standards Workshop
- Use of ANS Standard in Industry Training
- Engagement of Emerging Professionals
- Professional Division Liaison Program
- Techstreet Partnered Standards Store
- Incorporation of Risk-Informed and/or Performance-Based Methods
- New Standards Initiated
- Progress on Delinquent Standards
- Standards Committee Strategic Plan
- Challenges

3

American Nuclear Society

Advanced Reactor Standards Workshop

- The Standards Board took the lead in organizing an industry workshop to discuss advanced reactor standards needs.
- The need for the workshop was identified at the NRC Standards Forum held September 26, 2017.
- The full-day workshop was held May 2, 2018, at NRC with the goal to develop a path forward and set priorities for development of standards across all standards development organizations (SDOs).
- The workshop had over 70 attendees with 40 remote participants.
- Participants included representatives from utilities, vendors, designers, national laboratories, NEI, EPRI, NRC, DOE, and SDOs (other than ANS) including ASME, ASTM, and IEEE.
- A summary report has been issued with numerous actions as a first step.
- The report will be discussed at the upcoming NRC Standards Forum to be held in September 2018, date TBD.

4

American Nuclear Society

Use of ANS Standard in Industry Training

- Contacted by Exelon Power Labs, LLC, with request to use ANS external flooding standard (ANS-2.8) in a computer-based training (CBT) module.
- The CBT was developed for the purpose of knowledge transfer and retention key to safe and reliable operations for U.S. nuclear utilities.
- Preparation of the CBT was funded by utilities and several key industry organizations; no direct fee will be assessed for access.
- ANS as well as ASME, IEEE, EPRI, NEI, and others granted permission to use one or more copyrighted documents in the CBT.
- Use was approved by the Standards Board.
- Others CBTs may be developed in the future and may include additional ANS standards.

5

American Nuclear Society

Engagement of Emerging Professionals

- The Associate Member Program was created at the request of the ANS Young Member Group (YMG) almost ten years ago.
- An Associate Member can fully participate in standards activities with the exception of formal voting.
- Full membership is conferred through active engagement and contributions.
- Over 50 Associate Members placed since program initiation.
- Program information routinely sent to ANS student sections, YMG, and the NAYGN.
- Standards presentation made to NAYGN March 29, 2018.

6

American Nuclear Society

Liaison Program with ANS Professional Divisions Re-Established

- A liaison program has been re-established to improve the interaction between the Standards Committee and ANS Professional Divisions (PDs).
- The program supports each other more effectively with better use of limited resources.
- Liaisons confirmed and communication with PDs via appointed liaisons ongoing.
- PD liaisons invited to consensus committee meetings and teleconferences with standing agenda item available for PD reports, feedback, and recommendations.
- PDs informed of opportunities to participate in ANS standards program.

7

American Nuclear Society

Techstreet Partnered Store

- The standards portion of the ANS Store is being partnered with Techstreet (division of Clarivate).
- The partnership has many features that have the potential to increase our revenue and reduce our expenses including:
  - Multi-user PDF option and Secure PDF
  - Combination print-plus-PDF to increase the point of sale
  - Redlines showing changes in a standard from the previous version
  - Print using Techstreet's high quality print-on-demand to eliminate all printing and fulfillment costs
  - Reduction of many operating costs for the ANS Store including credit card fees and customer service, which would be absorbed by Techstreet
  - Collection of user information for marketing purposes
  - Reduced expenses and inclusion of digital rights management software saves ANS $12,000; increased revenue created by enhanced features expected to cover royalty fee within two years

8

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Incorporation of Risk-Informed and/or Performance-Based Methods

- The Risk-informed, Performance-based Principles and Policy Committee (RP3C) reviewed all ANS standards and projects.
- A list of standards that would provide the most benefit from risk-informed and/or performance-based methods was prepared.
- Consensus committees were tasked with evaluating RP3C's recommendations and reporting back to the Standards Board.

9

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New Standards In Development

- ANS-2.16, "Criteria for Modeling Design-Basis Accidental Releases from Nuclear Facilities"
- ANS-2.22, "Environmental Radiological Monitoring at Operating Nuclear Facilities"
- ANS-2.25, "Surveys of Ecology Needed to License Nuclear Facilities"
- ANS-3.8.10, "Criteria for Modeling Real-Time Accidental Releases at Nuclear Facilities"
- ANS-3.14, "Process for Aging Management and Life Extension of Nonreactor Nuclear Facilities"
- ANS-2.34, "Characterization and Probabilistic Analysis of Volcanic Hazards"
- ANS-8.28, "Administrative Practices for the Use of Non-Destructive Assay Measurements for Nuclear Criticality Safety"
- ANS-15.22, "Classification of Structures, Systems and Components for Research Reactors"
- ANS-20.1, "Nuclear Safety Criteria and Design Criteria for Fluoride Salt-Cooled High-Temperature Reactor Nuclear Power Plants"
- ANS-20.2, "Nuclear Safety Design Criteria and Functional Performance Requirements for Liquid-Fuel Molten Salt Reactor Nuclear Power Plants"
- ANS-30.1, "Integration of Risk-Informed, Performance-Based Principles and Methods into Nuclear Safety Design for Nuclear Power Plants"
- ANS-30.2, "Categorization and Classification of Structures, Systems, and Components for New Nuclear Power Plants"
- ANS-30.3, "Advanced Light-Water Reactor Risk-Informed Performance-Based Design Criteria"
- ANS-57.11, "Integrated Safety Assessments for Nonreactor Nuclear Facilities"

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American Nuclear Society

Progress on Delinquent Standards (+ 5 years)

Year	# of Current Standards at Close of Year	# of Standards Reaffirmed	# of Delinquent Standards	% of Delinquent Standards
2014	78	2	33	42.3%
2015	80	6	25	31.3%
2016	81	20	19	23.4%
2017	80	14	10	12.5%

11

American Nuclear Society

Standards Committee Strategic Plan (2016-2020)

The strategic plan was approved by the Standards Board in June of 2016 with a revision issued December 2017 to incorporate comments from the ANS Executive Committee. The plan includes five high-level goals and metrics to evaluate progress. The goals are as follows:

- Goal #1: Align Standards Development Priorities with Current and Emerging Industry Needs
- Goal #2: Develop and Maintain High Quality Standards
- Goal #3: Improve Standards Development Production and Efficiency
- Goal #4: Expand ANS Awareness and External Outreach
- Goal #5: Improve Industry Representation and Sustainability of Working Groups, Subcommittees, and Consensus Committees

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American Nuclear Society

Challenges

- Increased workloads and retirements add to challenge of staffing working groups.
  - Continued need to involve new members
- Accessible, searchable volunteer database more important than ever.
  - Initial request for searchable, volunteer database made in 2004.
  - Subsequently, the database was put on hold due to the Association Management System (AMS) upgrade.
  - Merger of Kavi's Workspace (used by ANS Standards Committee) and ANS Collaborate powered by Higher Logic (through the AMS) is believed to have the potential of connecting the two platforms with searching capabilities.
- Need to continue to be proactive in identifying needed standards to support key industry initiatives.
  - Advanced Reactors
  - New (Advanced Technology)

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American Nuclear Society

QUESTIONS?

14

American Nuclear Society

ATTACHMENT 2
Summary only

ANS/NRC Workshop to Develop a Strategic Vision for Advanced Reactor Standards

May 2, 2018 | 8:30 a.m. to 4:30 p.m. EDT
U.S. Nuclear Regulatory Commission
Three White Flint North
11601 Landsdown Street
North Bethesda, MD

On May 2, 2018, the American Nuclear Society (ANS) and the U.S. Nuclear Regulatory Commission (NRC) sponsored a workshop for industry partners to develop a strategic vision and path forward for advanced reactors standards. The workshop provided an opportunity for designers, vendors, owners, regulators, and representatives of standards development organizations (SDOs) to discuss standards needs to support advanced reactors. There were 121 participants either in person or remotely. (see Attachment 1 for a full list of attendees and Attachment 2 for webinar participants). A summary of the workshop is provided below.

1. Introductions

ANS Standards Board Chair Steven A. Arndt welcomed and thanked all for participating. The purpose of the workshop was explained. ANS President Robert Coward was introduced. He emphasized the importance of this workshop. He explained that he has come to two conclusions this year during this travels: 1) There is no nuclear future without nuclear today, and 2) The nuclear future doesn't look like it does today. We need to firm up the foundation and create a new nuclear future. This workshop is building the bridge. Coward urged attendees to reach out and encourage young professionals to join this effort. Lastly, he stated that we need standards that lead and guide nuclear facilities that address user needs.

Arndt continued stressing that the workshop was a goal setting forum. He reviewed the logistics for the workshop and the breakout questions each technology was asked to address. See Attachment 3 for Arndt's presentation providing more detail.

.

2. Presentations of Needs by Technology Working Groups

Technology Working Group (TWG) representatives for fast reactors, high temperature reactors, and molten salt reactors each presented information related to standards needs in there technical areas. Matthew Miller presented on behalf of the high temperature reactor group. Jason Redd presented for the molten salt reactor group. Paolo Ferroni stepped in at the last minute to represent the fast reactor group on behalf of TWG chair Jason DeWitte. Each presentation included a technology overview and indicated whether they have any unique features. Potential areas for future standards needs were identified. Presentations are available as follows:

- High Temperature Reactor Technology Working Group—Attachment 4
- Molten Salt Reactor Technology Working Group —Attachment 5
- Fast Reactor Technology Working Group—Attachment 6

TWGs recognized the benefit of standards, particularly endorsed standards. Standards were preferable, but if not available, designers would need to prepare their own guidance. The lack of a standard was not expected to delay development of advanced reactors. Several topical areas for standards were recommended for further discussion during the breakout sessions.

3. Breakout Sessions (by Technology)/Summary Preparations

Workshop participants divided into three groups by technology—fast reactors, high temperature reactors, and molten salt reactors—to discuss the assigned questions. Discussions were summarized to report back to the full group.

4. Presentations on Breakout Session Results

Workshop participants reassembled for a report of breakout sessions results. Representatives reporting on discussions were Peter Hastings for the high temperature breakout group, Jason Redd for the molten salt reactor group, and Paolo Ferroni for the fast reactor group. Responses to the five breakout questions for the three technology groups are provided below in table format for comparison. Presentations from the high temperature breakout groups (Attachment 7) and the fast reactor breakout group (Attachment 8) provide additional details.

1. For your technology, what would you say is the current status of standards to support the development, design, and licensing of advanced reactors? Are most of the needed standards available up to date? Do they cover the issues that have the most significant impact on the design? On the schedule?		
High Temperature Reactors	**Molten Salt Reactors**	**Fast Reactors**
• Generally speaking, sufficient for both licensing and design • ASME NQA-1, Quality Assurance, stability to be sought later • Evaluation of ANS-53.1, Modular Helium-Cooled Reactor (MHR) Design Process; ANS-30.1, Risk-Informed/Performance-Based (RIPB) Principles and Methods; ANS-30.2, Categorization and Classification of Structures, Systems, and Components (SSCs); in parallel with and informed by the Licensing Modernization Project (LMP) worthwhile and timely • LMP resolution • Consistency between ANS-53.1, MHR Design Process, and others	• Agrees that what is currently available is sufficient to move forward • Instrumentation and control (I&C) is the most important area • Environment safety also important • Would like to have a performance based-standard for acceptance criteria	• Existence of standards is not a requirement but is important to accelerate licensing • Existing standards represent a good starting point; however, they are not always up-to-date and/or best-suited for non-light water reactor (LWR) technologies • Some high-priority standards (schedule-wise) would benefit from modifications, (e.g. ASME NQA-1, Quality Assurance) • Would like existing standards (~860) grouped in high-level categories to facilitate their identification and priority-based use; work done at Oak Ridge National Laboratory for sodium fast reactor standards can be leveraged

2. List the five most current important standards (from any SDO) to your area that are in need of updating to support development, design, and licensing. Why are they your top five?		
High Temperature Reactors	**Molten Salt Reactors**	**Fast Reactors**
• ASME/ANS RA-S-1.4-2013, PRA for Non-LWRs (trial use) • ANS-30.1, RIPB Principles and Methods (in development) • ANS-30.2, Categorization and Classification of SSCs (in development) • ANSI/ANS-53.1-2011 (R2016) MHR Design Process • ANSI/ISA 67.02.1-2014, Safety Related Instrument-Sensing Line Piping and Tubing • ASME BPVC, Sec III, Div. 5, and related codes for welds, piping, etc. • Potential revisions to ASTM standards consistent with code requirements	• ANS standards on research reactors (ANS-15.X) are the most important; these standards need to be reviewed to determine if changes are needed • ANS-30.1, RIPB Principles and Methods (in development) • ANS-30.2, Categorization and Classification of SSCs (in development) • ANSI/ANS-53.1-2011 (R2016) MHR Design Process • ASME Sec. III, Div. 5 • Inservice Inspection (ISI) in Sec. II, Div. 2, will be of interest as it is being revised technology neutral next year • Welding materials – ASTM and/or AWS may need to add; braising (like welding) may be needed • ASME Operation and Maintenance Code • ACI 349, Concrete Structures for high flux	• ASME NQA-1, Quality Assurance (design, construction, and operation) • ANS-3.2, Quality Assurance (managerial and administrative controls) • ANS-57.1, Design Requirements for Fuel Handling Systems • ANS-54.2 (withdrawn), Fast Breeder Reactor Spent Fuel Storage • ASME BPVC, Sec. III, Div. 5, for environmental effects (mainly corrosion), cladded structural materials • ASME BPVC, Sec. XI, to capture features specific to fast reactor technologies

3. List the five most important technical areas that need standards development (where they currently don't have standards). Why are they your top five?		
High Temperature Reactors	**Molten Salt Reactors**	**Fast Reactors**
• RIPB "suite" • ASME BPVC, Sec. VIII, cyclic loads for high temp • Design life for ASME BPVC, Sec. VIII, and Sec. III, Div. 5 • Fiber optic (specifically) and qualification of I&C for high temp • ASME BPVC, Sec. XI, "fitness for service" high-temp failures ISI – team formed to evaluate	• Advanced manufacturing • Fuel salt purity • Radioactive material packaging, handling, shipping for products with salt residue; goal to reduce packaging. Tech neutral standard would be beneficial • Chemistry and corrosion control; inspection and testing for corrosion	• Source term assessment for non-LWRs (would support emergency planning zone size reduction) • Casks for shipping and dry-storage of high assay low-enriched uranium (LEU) • Startup testing and reliability measurement of passive safety systems. Note: highest priority is for reactor vessel auxiliary cooling systems (RVACS) (suggested to reach an industry-agreed method to assess RVACS and address it in licensing phase)

3. List the five most important technical areas that need standards development (where they currently don't have standards). Why are they your top five?		
High Temperature Reactors	**Molten Salt Reactors**	**Fast Reactors**
		• Materials joining such as printed circuit heat exchangers (and diffusion bonding in general) and silicon carbide • Multi-use, inter-operability components—standardization of component interfaces to ease and increase level of modularity in construction • Additive manufacturing • Standards applicable to some specific features of micro-reactors for "niche" applications (e.g. remote control and security aspects) • Digital technology (e.g. use of off-the-shelf computer applications to standardize digital technology implementation)

4. Provide some prioritization of the two lists, both in overall need (must have to move forward) and in timing (need by a certain date). If possible, provide insights as to why the standard has priority and what aspect of the issues are driving the priority.		
High Temperature Reactors	**Molten Salt Reactors**	**Fast Reactors**
1. RIPB-related standards 2. Everything else Sub-prioritized by what needs development, what needs revision, and/or what needs endorsement From question 2: 1. Any changes needed for RIPB licensing a) ASME/ANS RA-S-1.4-2013, PRA for Non-LWRs (trial use) b) ANS-30.1, RIPB Principles and Methods (in development) c) ANS-30.2, Categorization and Classification of SSCs (in development – related to LMP) d) ANSI/ANS-53.1-2011 (R2016) MHR Nuclear Safety Design	Felt it is too early to prioritize	Above list in question #3 is provided in decreasing order of importance

4. Provide some prioritization of the two lists, both in overall need (must have to move forward) and in timing (need by a certain date). If possible, provide insights as to why the standard has priority and what aspect of the issues are driving the priority.		
High Temperature Reactors	**Molten Salt Reactors**	**Fast Reactors**
2. ANSI/ISA 67.02.1-2014, Safety Related Instrument-Sensing Line Piping and Tubing 3. ASME BPVC, Sec. III, Div. 5, and related codes for welds, piping, etc. 4. Potential revisions to ASTM standards consistent with code requirements From question 3: 1. RIPB "suite" 2. Sec. VIII cyclic loads for high temp 3. Design life for Sec. VIII and Sec. III, Div. 5 4. Fiber optic (specifically) and qualification of I&C for high temp 5. Sec. XI "fitness for service" high-temp failures ISI – team formed to evaluate		

5. A) What cross-cutting issues do you believe need to be included in the development of new standards for advanced reactors or the updating of current standards? These could include analysis methods (like probabilistic risk assessment, thermal hydraulics, human factors, etc.) or other cross-cutting issues like staffing, emergency management, advanced instrumentation, and control, security, etc.		
High Temperature Reactors	**Molten Salt Reactors**	**Fast Reactors**
• All of the above (except for ANS-53.1, MHR Nuclear Safety Design) • Process/understanding of how to raise code issues and get them resolved quickly o Accelerating research and standards development o Application of demonstration/prototype approach • Recognition of/ideas for taking optimum credit for mod/sim vs. testing	• Emergency management less of a concern with safer advanced reactors • Standardization of material accountability control method • Intersection of human factors, simulation assisted engineering, tightly coupled I&C • Alarms management • Digital I&C, ISG-05 on highly integrated control room • Molten salt reactor safeguards • Test procedure and data format for characterization of salt	• High assay LEU fuel transportation/storage • Safety-significance-based classification of SSCs within ASME NQA-1 • Source term assessment (accounting for coolant-specific radionuclide retention capability; confinement vs. containment) • Passive systems analysis/qualification

5. B) Is there a preference across the advanced reactor industry that future advanced reactor standards be more performance based and use high-level, risk-informed principles compared to current standards? What should drive this decision?		
High Temperature Reactors	**Molten Salt Reactors**	**Fast Reactors**
• Performance based? o Maintain existing top level regulatory criteria o Performance-based criteria as a more easily demonstrated metric to show we meet top level regulatory criteria is a good thing o LMP-type approach identifies what is important in terms of functional outcomes, other prescriptive "requirements" should not apply o Additional discussion needed to translate this concept (currently being applied at regulatory framework level) to standards level • Risk informed? o Yes, within reason o Defense in depth is important, but so is knowing when "enough is enough" • What is driver? o Ensuring effective/efficient licensing process through safety-focused review o Reducing cost of plant o Lack of meaningful deterministic safety framework for non-LWRs	• Prefers performance-based standards over prescriptive standards • Prescriptive method recognized as needed in some cases	• Key driver is cost • Recognized that RIPB is likely more onerous effort on the regulator • Standards should be outcome-focused to avoid need for design modifications to comply with overly prescriptive criteria

It was estimated that there are over 800 existing standards (current and withdrawn) but that very few people have a comprehensive knowledge of all standards. Participants were informed of a list of consensus standards used by the NRC that may be of interest. The list can be found on NRC's website at https://www.nrc.gov/about-nrc/regulatory/standards-dev/consensus.html.

6. Meeting Summary and Actions

Several standards and codes emerged as priorities between technology groups as candidates for updating and/or harmonization. Responsible SDOs are asked to follow up on the following standards and standards projects to insure their usefulness and availability to advanced reactors. It should be noted that TWG and stakeholder engagement will be necessary to adequately address needs.

American Society of Mechanical Engineers (ASME)

ASME NQA-1-2017, “Quality Assurance Requirements for Nuclear Facilities Applications”
ACTION: Examples of issues in applying NQA-1 to non-LWRs to be considered:

- Subpart 2.2 (QA Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Facilities). Concerns with classification levels (a, b, c, d) “based on important physical characteristics and not upon the important functional characteristics of the item with respect to safety, reliability, and operation.”
- Subpart 2.5 (QA Requirements for Installation, Inspection, and Testing of Structural Concrete, Structural Steel, Soils, and Foundations for Nuclear Power Plants). Implicit assumptions on installation, inspection and testing of different concrete, steel, foundation, soil, earthwork, equipment and other items and their quality requirements regardless of importance to safety and based on LWR experience.
- Subpart 2.15 (QA Requirements for Hoisting, Rigging, and Transporting of Items for Nuclear Power Plants). Similar concerns on classifications based off of LWR experience for categories A-C.
- Subpart 2.20 (QA Requirements for Subsurface Investigations for Nuclear Power Plants). Possibly less critical, but subsurface QA requirements based on LWR experience and LWR importance to safety of the soil and seismic effects.

ASME Boiler Pressure Vessel Code, various sections (III, VIII, XI) and various divisions
ACTIONS: Areas to be considered for potential inclusion or update include:

- welds, piping, etc.
- inservice Inspection
- Construction rules
- environmental effects (corrosion)
- cladded structural materials
- Cyclic loads
- fitness for service
- design life
- additive manufacturing

American Nuclear Society (ANS)

ANS-30.1-201x, “Integration of Risk-Informed, Performance-Based Principles and Methods into Nuclear Safety Design for Nuclear Power Plants” (new standard in development)
ACTION: Completion of standard; harmonization with other standards and the LMP effort

ANS-30.2-201x, “Categorization and Classification of Structures, Systems, and Components for New Nuclear Power Plants” (new standard in development)
ACTION: Completion of standard; harmonization with other standards and the LMP effort

ANSI/ANS-53.1-2011 (R2016), “Nuclear Safety Design Process for Modular Helium-Cooled Reactor Plants”
ACTION: Review current standard for consistency with other standards and the LMP effort

Institute of Electrical and Electronics Engineers (IEEE)

IEEE I&C standards including IEEE Std. 603 and IEEE Std. 323 and the supporting standards
ACTION: Incorporate fiber optics and qualification to higher temperatures and different environments.

Other areas that emerged as topics for potential new standards, standards that may need to be revised, or general areas to be considered by SDOs are listed below. It should be noted that TWG and stakeholder engagement will be necessary to define or clarify specific needs to proceed.

American Concrete Institute

ACI 349-13, “Code Requirements for Nuclear Safety-Related Concrete Structures”
ACTION: Explore need for revision of current standard to address advanced reactors

American Nuclear Society

ANSI/ANS-3.2-2012 (R2017), “Managerial, Administrative, and Quality Assurance Controls for the Operational Phase of Nuclear Power Plants”
ACTION: Explore need for revision of current standard to address advanced reactors

ANS-15.X, Series of standards for research reactors
ACTION: Evaluate research reactor standards for applicability to advanced reactors

ANSI/ANS-18.1-2016, “Radioactive Source Term for Normal Operation of Light Water Reactors”
ACTION: Explore need for revision of current standard to address advanced reactors

ANSI/ANS-54.2-1985 (W1995), “Design Bases for Facilities for LMFBR Spent Fuel Storage in Liquid Metal Outside the Primary Coolant Boundary”
ACTION: Explore need for reinvigoration of historical standard to address advanced reactors

ANSI/ANS-57.1-1992 (R2015), “Design Requirements for Light Water Reactor Fuel Handling Systems”
ACTION: Explore need for revision of current standard to address advanced reactors
.

American Society of Mechanical Engineers (ASME)

ASME OM 2017, “Operation and Maintenance of Nuclear Power Plant Code”
ACTION: Explore need for revision of current code to address advanced reactors

American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS)

ASME/ANS 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)”

ACTION: Trial use standard to be finalized and seek approval of the American National Standards Institute

American Society of Testing and Materials (ASTM)

ACTION: General suggestion to evaluate need for revisions to ASTM standards consistent with code (e.g., welding materials, brazing, reactive and refractory metals and alloys under the B10 Committee); also to explore standardization of additive manufacturing

American Welding Society

AWS welding/brazing standards
ACTION: Evaluate welding/brazing standards for potential need to update for advanced reactor use

International Society of Automation (ISA)

ANSI/ISA 67.02.1-2014, "Safety-Related Instrument Sensing Line Piping and Tubing Standard for Use in Nuclear Power Plants"
ACTION: Evaluate need for update of current standard for high temperature

Unassigned topical areas needing standardization for advanced reactors that may be taken up by the most appropriate SDO

- Performance-based standard for acceptance criteria (all SDOs)
- Advanced manufacturing
- Fuel salt purity
- Radioactive material packaging handling, and shipping for products with salt residue

Topics for future workshop discussions recognized include:

- Defense in depth
- Harmonization with LMP approach
- Acceleration of standards development; possible funding support to help
- Unique aspects related to seismic
- Reducing loads and structures

Miscellaneous actions:

- Prepare and group a list of existing standards (~860) in high-level categories to facilitate their identification and priority-based use
- Encourage more vendor and international participation at subsequent meetings and workshops
- All SDOs to reinforce industry preference for RIPB methods to be used when developing or updating a standard or code

The next NRC Standards Forum will be scheduled for September of this year at NRC and was thought to be a good opportunity to continue discussions of need actions, prioritization, and next steps.

In closing, Steven Arndt expressed the sentiment that the workshop had great interaction and cooperation from all. He added that there were two main actions, they are to reach out to SDOs of standards that were identified and to reach out to the TWGs with the information gathered today to help establish the next steps.

7. Adjournment

Dr. Steven Arndt thanked all for participating before adjourning the workshop.

List of Attachments (available upon request)	
Attachment 1	Workshop Sign In Sheets
Attachment 2	Webinar Participation Reports
Attachment 3	Welcome/Logistic Presentation (ANS Standards Board Chair Steven Arndt)
Attachment 4	High Temperature Reactor TWG Presentation (Matthew Miller)
Attachment 5	Molten Salt Reactor TWG Presentation (Jason Redd)
Attachment 6	Fast Reactor TWG Presentation (Paolo Ferroni on behalf of Jason DeWitte)
Attachment 7	High Temperature Breakout Session Summary Presentation (Peter Hastings)
Attachment 8	Fast Reactor Breakout Session Summary Presentation (Paolo Ferroni)

ATTACHMENT 3
(includes sales report)

Secretary/Staff Report
2018 ANS Annual Meeting

Partnering the ANS Store with Techstreet

The contract to partner the standards portion of the online ANS Store with Techstreet has been signed. Techstreet is currently developing the store which is expected to go live by the end of this month (June). Several factors led to the decision to partner with Techstreet. The ability of Techstreet to add digital rights management (DRM) to our electronic standards to prevent our standards from being saved to a network drive or duplicated via email attachment was a major factor in this decision. The cost of DRM software and labor associated with the management of the software is covered by Techstreet with no added cost to ANS. Additionally, Techstreet has many features that have the potential to increase our revenue and reduce our expenses including:

- Multi-user PDF option
- Combination print-plus-PDF to increase the point of sale
- Redlines showing changes in a standard from the previous version
- Print using Techstreet's high quality print-on-demand to eliminate all printing and fulfillment costs
- Reduction of many operating costs for the ANS store including credit card fees and customer service, which would be absorbed by Techstreet
- Collection of user information for marketing purposes (option for users to select "Track It" builds customer data)

Volunteer Database Update

An initial request was made in 2004 for the ANS Information Technology Department to create an online volunteer database that Standards Committee chairs could use to search for potential candidates to fill committee staffing needs. Some work was initiated but eventually stalled due to the lack of needed hardware and ANS staff changes. More recently the project was put on hold until the Associate Management System (AMS) was upgraded. The merger of Kavi's Workspace (used by ANS Standards Committee) and ANS Collaborate powered by Higher Logic (through the AMS) is believed to have the potential of connecting the two platforms with searching capabilities. Workspace balloting capabilities have been added to ANS Collaborate but currently do not have all of the functionality of the features needed for standards ballots. This may be due to the management of committee rosters through the AMS. ANS staff will continue to follow the progress of the merger of the two platforms and potential use as the basis for the volunteer database.

Information Center on Nuclear Standards and *Nuclear Standards News*

The Information Center on Nuclear Standards (ICONS) Membership Program is unchanged from 2017 with four remaining members renewing in 2018. The program provides members a hard copy of all ANS standards when published, a copy of *Nuclear News*, a copy of ANS News, and a copy of *Nuclear Standards News (NSN)*—a product of the ICONS program. *NSN* is also sold to libraries and organizations as a separate product. Starting in 2018, *NSN* is provided to all ANS members as a member benefit. The ICONS program remains a relic from the "print" era. Most ICONS members migrated over to an electronic subscription of our standards through the Information Handling Services (IHS). Subscription royalties through IHS remain strong. Remaining ICONS members will continue to be served as long as interested.

Workspace Usage Stats

The ANS Standards Workspace has been in use for four years. The Standards Board, consensus committees, and subcommittees use the platform for all ballots and communication. Working group use of the site continues to grow. The site now includes 175 active workspaces for all

committee levels and active accounts for almost 750 users (ANS Standards Committee members); 4141 documents have been posted, 3952 email messages generated, and 639 ballots have been issued since Workspace was launched. Standards Board and consensus committee ballot usage since launching the site is as follows:

Committee	2015	2016	2017	2018
Standards Board	25	64	53	17
ESCC	11	25	25	7
FWDCC	3	17	15	2
LLWRCC	13	17	17	13
NCSCC	6	10	17	3
NRNFCC	5	4	2	2
RARCC	6	14	5	5
SRACC	5	14	10	6

ANS Style Manual in Development

The ANS Standards Committee has been referring to the ANSI Style Manual since its publication in 1991. ANSI no longer maintains their style manual and has moved to a style guide sheet with minimal guidance. An ANS Style Manual in the likeness of the ANSI Style Manual remains in development.

2017 Annual Activity Report .Issued

The 2017 Standards Committee Report of Annual Activities was issued in May of 2018. The report provides updates and status reports on standards and projects and recognizes hundreds of volunteer contributing to the ANS standards program for the calendar year 2017. A total of 46 chairs submitted a report for one or more committees. In particular, JCNRM Co-chair Robert Budnitz coordinate efforts with the three JCNRM subcommittee chairs to provide detailed reports including a list of pilots on trial use standards. The annual activity report is available at https://ssl.ans.org/cms/media/?m=603&n=2017+Annual+Activity+Report-5-30-18.pdf.

Other Activities Supported by ANS Staff in 2018

- Revised and gained approval of a revision to the Standards Committee Rules and Procedures to maintain compliance with changes in the 2018 ANSI Essential Rules (Revision approved by ANSI on 2/23/18)
- Prepared ANS consensus committee evaluation reports
- Prepared balance of interest reports for all consensus committees
- Edited and/or published four standards in 2018 (ANS-2.6, ANS-2.10, ANS-8.24, ANS-57.3)
- Facilitated planning and organization of the ANS/NRC Advanced Reactor Standards Needs Workshop
- Issued quarterly delinquent standards reports
- Submitted quarterly financial and technical reports to NRC for the PRA standards grant
- Wrote and published three issues of *NSN*
- Organized, supported, and prepared notes or minutes for numerous teleconferences including:
  - Standards Board: 2/5/18 & 5/15/18 teleconferences
  - ESCC: 3/19/18 teleconference
  - JCNRM Executive Committee bi-weekly calls
  - LLWRCC: 1/22/18 & 4/13/18 teleconferences
  - NCSCC: 5/22/18 teleconference

Standards Sales Report

October 16, 2017 - May 15, 2018

Designation & Title of Standard	# Sold	Total
ANS/ASME-58.22-2014, Requirements for Low Power and Shutdown PRA	1	$440.00
ASME/ANS RA-S-1.2-2014: Severe Accident Progression and Radiological Release (Level 2) PRA Standard for Nuclear Power Plant Applications for LWRs	4	$880.00
ASME/ANS RA-S-1.3-2017: Standard for Radiological Accident Offsite Consequence Analysis (Level 3 PRA) to Support Nuclear Installation Applications	5	$1,100.00
ASME/ANS RA-S-1.4-2013: Probabilistic Risk Assessment Standard for Advanced Non-LWR Nuclear Power Plants	1	$500.00
ANSI/ANS-2.17-2010; R2016: Evaluation of Subsurface Radionuclide Transport at Commercial Nuclear Power Plants	1	$152.00
ANSI/ANS-2.21-2012; R2016: Criteria for Assessing Atmospheric Effects on the Ultimate Heat Sink	1	$61.00
ANSI/ANS-2.2-2016, Earthquake Instrumentation Criteria for Nuclear Power Plants	3	$465.00
ANSI/ANS-2.23-2016: Nuclear Power Plant Response to an Earthquake	2	$360.00
ANSI/ANS-2.26-2004;R2010;R2017 (R=Reaffirmed): Categorization of Nuclear Facility Structures, Systems, and Components for Seismic Design	1	$131.00
ANSI/ANS-2.3-1983;W1993 (W=Withdrawn): Standard for Estimating Tornado and Extreme Wind Characteristics at Nuclear Power Sites	1	$86.00
ANSI/ANS-2.3-2011; R2016: Estimating Tornado, Hurricane, and Extreme Straight Line Wind Characteristics at Nuclear Facility Sites	2	$154.00
ANSI/ANS-3.1-2014, Selection, Qualification, and Training of Personnel for NPPs	5	$705.00
ANSI/ANS-3.2-2012; R2017: Managerial, Administrative, and Quality Assurance Controls for the Operational Phase of Nuclear Power Plants	2	$262.20
ANSI/ANS-3.4-2013: Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants	1	$136.80
ANSI/ANS-3.5-2009: NPP Simulators for Use in Operator Training and Examination	3	$399.00
ANSI/ANS-41.5-2012: Verification and Validation of Radiological Data for Use in Waste Management and Environmental Remediation	5	$885.00
ANSI/ANS-5.10-1998;R2006;R2013: Airborne Release Fractions at Non-Reactor Nuclear Facilities	1	$145.00
ANSI/ANS-5.1-2014, Decay Heat Power in Light Water Reactors	4	$717.60
ANSI/ANS-5.4-2011: Method for Calculating the Fractional Release of Volatile Fission Products from Oxide Fuel	2	$172.00
ANSI/ANS-6.1.1-1991;W2001: Neutron and Gamma-Ray Fluence-To-Dose Factors	2	$224.00
ANSI/ANS-6.1.2-2013: Group-Averaged Neutron and Gamma-Ray Cross Sections for Radiation Protection and Shielding Calculations for Nuclear Power Plants	1	$61.00
ANSI/ANS-6.4-2006; R2016: Nuclear Analysis and Design of Concrete Radiation Shielding for Nuclear Power Plants	1	$229.00
ANS-6.4.3-1991, W2001; Gamma-Ray Attenuatio Coefficients And Buildup Factors for Engineering Materials	1	$256.00
ANSI/ANS-6.6.1-2015: Calculation and Measurement of Direct and Scattered Gamma Radiation from LWR Nuclear Power Plants	1	$142.20
ANSI/ANS-8.10-2015, Criteria for Nuclear Criticality Safety Controls in Operations with Shielding and Confinement	1	$61.00
ANSI/ANS-8.1-2014, Nuclear Criticality Safety in Operations with Fissionable Material Outside Reactors	43	$2,835.00
ANSI/ANS-8.14-2004; R2011; R2016: Use of Soluble Neutron Absorbers in Nuclear Facilities Outside Reactors	2	$98.80

Standards Sales Report

October 16, 2017 - May 15, 2018

Designation & Title of Standard	# Sold	Total
ANSI/ANS-8.15-2014, Nuclear Criticality Safety Control of Selected Actinide Nuclides	3	$338.80
ANSI/ANS-8.17-2004;R2009;R2014: Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors	3	$150.80
ANSI/ANS-8.19-2005; W2014: Administrative Practices for Nuclear Criticality Safety	1	$44.00
ANSI/ANS-8.19-2014: Administrative Practices for Nuclear Criticality Safety	42	$1,456.00
ANSI/ANS-8.20-1991;R1999;R2005;R2015: Nuclear Criticality Safety Training	1	$52.00
ANSI/ANS-8.21-1995;R2001;R2011: Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors	1	$52.00
ANSI/ANS-8.22-1997;R2006;R2011; R2016: Nuclear Criticality Safety Based on Limiting and Controlling Moderators	1	$62.00
ANSI/ANS-8.23-1997;W2007 (W=Withdrawn): Nuclear Criticality Accident Emergency Planning and Response	1	$46.80
ANSI/ANS-8.23-2007;R2012: Nuclear Criticality Accident Emergency Planning and Response	2	$248.90
ANSI/ANS-8.24-2007;R2012;W2017 (W=Withdrawn): Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations	2	$229.90
ANSI/ANS-8.24-2017: Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations	5	$661.50
ANSI/ANS-8.26-2007;R2016: Criticality Safety Engineer Training and Qualification Program	2	$83.60
ANSI/ANS-8.27-2015: Burnup Credit for LWR Fuel	1	$92.70
ANSI/ANS-8.3-1997;R2003;R2012;R2017: Criticality Accident Alarm System	1	$112.00
ANSI/ANS-8.5-1996;R2002;R2007;R2012;R2017: Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material	1	$70.00
ANSI/ANS-8.7-1998;R2007;R2012; R2017 (R=Reaffirmed): Nuclear Criticality Safety in the Storage of Fissile Materials	1	$96.00
ANSI/ANS-8.7-1998;R2007;R2012;R2017 (R=Reaffirmed): Nuclear Criticality Safety in the Storage of Fissile Materials	1	$96.00
ANSI/ANS-10.2-2000;R2009: Portability of Scientific and Engineering Software	1	$143.00
ANSI/ANS-10.4-1987;R1998;W2008 (R=Reaffirmed,W=Withdrawn): Guidelines for the Verification and Validation of Scientific and Engineering Computer Programs for the Nuclear Industry	1	$136.80
ANSI/ANS-10.4-2008; R2016: Verification and Validation of Non-Safety-Related Scientific and Engineering Computer Programs for the Nuclear Industry	1	$143.00
ANSI/ANS-15.11-2016: Radiation Protection at Research Reactor Facilities	4	$639.60
ANSI/ANS-15.15-1978;R1986;W1996 (R=Reaffirmed, W=Withdrawn): Criteria for the Reactor Safety Systems of Research Reactors	2	$133.00
ANSI/ANS-15.16-2015, Emergency Planning for Research Reactors	4	$304.20
ANSI/ANS-15.2-1999;R2009;R2016: Quality Control for Plate-Type Uranium-Aluminum Fuel Elements	1	$70.00
ANSI/ANS-15.4-2016: Selection and Training of Personnel for Research Reactors	6	$669.50
ANSI/ANS-15.7-1977;R1986;W1996: Research Reactor Site Evaluation	1	$63.00
ANSI/ANS-15.8-1995;R2005;R2013(R=Reaffirmed): Quality Assurance Program Requirements for Research Reactors	3	$203.00
ANSI/ANS-16.1-1986;W1996 (W=Withdrawn): Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure	1	$158.00

Standards Sales Report

October 16, 2017 - May 15, 2018

Designation & Title of Standard	# Sold	Total
ANSI/ANS-16.1-2003; R2008; R2017: Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure	2	$298.00
ANSI/ANS-18.1-1999;W2009: Radioactive Source Term for Normal Operation of LWRs	1	$105.00
ANSI/ANS-18.1-2016: Radioactive Source Term for Normal Operation of LWRs	1	$112.00
ANSI/ANS-19.10-2009; R2016: Methods for Determining Neutron Fluence in BWR and PWR Pressure Vessel and Reactor Internals	3	$177.00
ANSI/ANS-19.11-2017: Calculation and Measurement of the Moderator Temperature Coefficient of Reactivity for Pressurized Water Reactors	1	$115.20
ANSI/ANS-19.1-2002;R2011: Nuclear Data Sets for Reactor Design Calculations	2	$154.00
ANSI/ANS-19.3.4-2002;R2008;R2017: The Determination of Thermal Energy Deposition Rates in Nuclear Reactors	1	$62.00
ANSI/ANS-19.3-2005;W2011 (W=Withdrawn): Determiniation of Steady-State Neutron Reaction-Rate Distributions and Reactivity of Nuclear Power Reactors	1	$133.00
ANSI/ANS-19.3-2011; R2017: Steady-State Neutronics Methods for Power Reactor Analysis	5	$705.00
ANSI/ANS-19.4-1976;R1983;R1989;R2000;W2010 (R=Reaffirmed, W=Withdrawn): A Guide for Acquisition and Documentation of Reference Power Reactor Physics Measurements for Nuclear Analysis Verification	1	$86.00
ANSI/ANS-19.6.1-2011; R2016: Reload Startup Physics Tests for PWRs	3	$385.70
ANSI/ANS-55.1-1992;R2000;R2009;R2017 (R=Reaffirmed): Solid Radioactive Waste Processing System for Light-Water-Cooled Reactor Plants	1	$164.00
ANSI/ANS-56.10-1982;R1987;W1997 (R=Reaffirmed, W=Withdrawn): Subcompartment Pressure and Temperature Transient Analysis in LWRs	1	$142.00
ANSI/ANS-56.2-1984;R1989;W1999 (R=Reaffirmed, W=Withdrawn): Containment Isolation Provisions for Fluid Systems After a LOCA	1	$198.00
ANSI/ANS-56.5-1979;R1987;W1997 (R=Reaffirmed, W=Withdrawn): PWR and BWR Containment Spray System Design Criteria	1	$142.00
ANSI/ANS-56.8-2002;R2016 (R=Reafirmed): Containment System Leakage Testing Requirements (with errata)	1	$149.00
ANSI/ANS-57.3-2018: Design Requirements for New Fuel Storage Facilities at LWRs	1	$77.40
ANSI/ANS-57.5-1996;R2006;W2016 (W=Withdrawn): Light Water Reactors Fuel Assembly Mechanical Design and Evaluation	1	$96.00
ANSI/ANS-57.9-1992;R2000;W2010 (R=Reaffirmed, W=Withdrawn): Design Criteria for an Independent Spent Fuel Storage Installation (Dry Type)	2	$386.00
ANSI/ANS-58.14-2011; R2017: Safety and Pressure Integrity Classification Criteria for Light Water Reactors	1	$213.00
ANSI/ANS-58.2-1988;W1998 (W=Withdrawn): Design Basis for Protection of Light Water Nuclear Power Plants Against the Effects of Postulated Pipe Rupture	3	$630.00
ANSI/ANS-58.8-1994;R2001;R2008;R2017 (R=Reaffirmed): Time Response Design Criteria for Safety-Related Operator Actions	1	$96.00
ANSI/ANS-58.9-2002;R2015 (R=Reaffirmed): Single Failure Criteria for LWR Safety-Related Fluid Systems	1	$52.00
Total	**227**	**$22,893.00**

ATTACHMENT 4 (includes BOI reports for all CCs)

American Nuclear Society

Environmental & Siting Consensus Committee

Balance of Interest (June 2018)

Architect-Engineer (1 Vote)

Ng, Kit	Bechtel Power Corporation

Consultant (3 Votes)

Call, Jennifer (Subcommittee Chair)	Oasys, Inc.
Mazzola, Carl (ESCC Chair)	Project Enhancement Corporation
Simpkins, Ali	Dade Moeller, an NV5 Company

Government Agency (3 Votes)

Li, Yong	Defense Nuclear Facilities Safety Board
*O'Brien, James	U.S. Department of Energy
*(Rosenbloom, Samuel; U.S. Department of Energy)	
*Xu, James (Subcommittee Vice Chair)	U.S. Nuclear Regulatory Commission
*(Parks, Leah (Subcommittee Chair); U.S. Nuclear Regulatory Commission)	
*(Doub, Peyton (Subcommittee Chair); U.S. Nuclear Regulatory Commission)	

Individual (2 Votes)

Bryson, Kevin (Subcomittee Vice Chair)	Individual
Savy, Jean	Individual

National Laboratory/Government Facilities (3 Votes)

*Bellinger, Thomas	Consolidated Nuclear Security, llc
*(Hunt, R. Joe; Consolidated Nuclear Security, llc)	
Bruggeman, David	Los Alamos National Laboratory
Hossain, Quazi (Subcommittee Chair)	Lawrence Livermore National Laboratory

Owner/Operator (1 Vote)

Snead, Paul	Duke Energy

Vendor (1 Vote)

Gao, Yan (ESCC VC & Subcommittee Chair)	Westinghouse Electric Company, LLC

*Shares one vote with others from the same company

Vote Summary

Architect-Engineer (1 Vote)	7%
Consultant (3 Votes)	21%
Government Agency (3 Votes)	21%
Individual (2 Votes)	14%
National Laboratory/Government Facilities (3 Votes)	21%
Owner/Operator (1 Vote)	7%
Vendor (1 Vote)	7%
TOTAL VOTES (14)	100%

5/16/2018

American Nuclear Society

Fuel, Waste, and Decommissioning Consensus Committee

Balance of Interest (June 2018)

Architect-Engineer (2 Votes)

Hillyer, David	Energy Solutions
Lewis, D. Wayne	WECTEC

Government Agency (1 Vote)

Felsher, Harry	U.S. Nuclear Regulatory Commission

Individual (2 Votes)

Brault, Jeffery	Individual
Jansen Vehec, Jodine	Individual

National Laboratory/Government Facilities (1 Vote)

Lucchini, Jean Francois	Los Alamos National Laboratory

Owner (2 Votes)

Miller, Coleman	Pacific Gas & Electric Company
Stasko, Maryanne	Duke Energy

Vendor (3 Votes)

Bader, Steven	AREVA Federal Services, LLC
Sanders, Mitchell	Westinghouse Electric Company, LLC
Schilthelm, Steven	BWXT, Inc.

Vote Summary

Architect-Engineer (2 Votes)	18%
Government Agency (1 Vote)	9%
Individual (2 Votes)	18%
National Laboratory/Government Facilities (1 Vote)	9%
Owner (2 Votes)	18%
Vendor (3 Votes)	27%
TOTAL VOTES (11 Votes)	100%

5/18/2018

American Nuclear Society

ASME/ANS Joint Committee on Nuclear Risk Management

Balance of Interest (June 2018)

Consultant (6 Votes)	
Amico, Paul J.	Jensen Hughes
Hughes, Eugene A.	ETRANCO
Jones, Diane M.	Maracon, a division of Enercon
Sloane, Barry D.	Jensen Hughes
True, Douglas E.	Jensen Hughes
Wakefield, Donald J.	ABS Consulting

Government Agency (3 Votes)	
Drouin, Mary	U.S. Nuclear Regulatory Commission
O'Brien, James	U.S. Department of Energy
Spitzer, Cornelia	International Atomic Energy Agency

Individual (10 Votes)	
Bernsen, Sidney A.	Individual
Chapman, James	Individual
Fleming, Karl A.	Individual
Grantom, C. Rick	Individual
Hackerott, H. Alan	Individual
Kojima, Shigeo	Individual
Levinson, Stanley H.	Individual
Ravindra, Mayasandra K.	Individual
Sattison, Martin	Individual
Wall, Ian B.	Individual

Note: The JCNRM has multiple votes from the same organization. While not permitted by ANS unless a justification is approved, this is permitted by ASME. Efforts are underway by the JCNRM leadership to reduce Jensen Hughes votes.

National Laboratory/Government Facilities (3 Votes)	
Bari, Robert A	Brookhaven National Laboratory
Budnitz, Robert J.	Lawrence Berkeley National Laboratory
Denman, Matthew	Sandia National Laboratories

Owner/Operator (7 Votes)	
Anderson, Victoria	Nuclear Energy Institute
Apostolakis, George	Central Research Institute of Electric Power Industry
Ferrante, Fernando	Electric Power Research Institute
Fine, K. Raymond	FirstEnergy Nuclear Operating Company
Hook, Thomas G.	Arizona Public Power
Kindred, Gerry	Tennessee Valley Authority
Stone, Jeff	Exelon Corporation

Universities (1 Vote)	
Nelson, Pamela F.	National Autonomous University of Mexico

Vendor (4 Votes)	
Henneke, Dennis W.	General Electric
Maioli, Andrea	Westinghouse Electric Co., LLC
Schneider, Raymond E.	Westinghouse Electric Co., LLC
Young, James W.	GE Hitachi

Voting Summary

Consultant (6 Votes)	18%
Government Agency (3 Votes)	9%
Individual (10 Votes)	29%
National Laboratory/Government Facilities (3 Votes)	9%
Owner/Operator (7 Votes)	21%
Universities (1 Vote)	3%
Vendor (4 Votes)	12%
Total Votes = 34	100%

In 2008, the Standards Board approved two votes from Westinghouse. The justification is that one individual represents existing plants, the other new plants.

American Nuclear Society

Large Light Water Reactor Consensus Committee

Balance of Interest (June 2018)

Architect-Engineer (2 Votes)	
French, Michelle	WECTEC
*Routh, Stephen *(Christensen, Lowell; Bechtel Power)	Bechtel Power Corporation
Consultant (5 Votes)	
Burg, Robert	Engineering Planning & Management, Inc.
Gebers, Steven	Quantum Nuclear Services
Glover, James	Graftel, Inc.
Lloyd, Evan (Subcommittee Chair)	Exitech Corporation
Markovich, Ronald (Subcommittee Chair)	Contingency Management Consulting
Government Agency (1 Vote)	
*Carpenter, Gene (LLWRCC Chair) *Guha, Pranab; (Subcommittee Chair) U.S. Department of Energy	U.S. Department of Energy
Individual (2 Votes)	
Reuland, William (LLWRCC Vice-Chair)	Individual
Stamm, Steven	Individual
National Laboratory/Government Facilities (1 Vote)	
Linn, Mark	Oak Ridge National Laboratory
Owner/Operator (3 Votes)	
Brown, Charles	Southern Company
Florence, James	Nebraska Public Power District
Johnson-Turnipseed, Earnestine	Entergy Corporation
Society (1 Vote)	
Moseley, Jr., Charles	ASME NQA Liaison (Individual)
Vendor (4 Votes)	
Colby, Mark	Global Nuclear Fuels
Copora, Gary	Westinghouse Electric Company, LLC
Gardner, Darrell	Kairos Power
Meneely, Timothy	Westinghouse Electric Company, LLC

**shares one vote*

Voting Summary	
Architect-Engineer (2 Votes)	11%
Consultant (5 Votes)	26%
Government Agency (1 Vote)	5%
Individual (2 Votes)	11%
National Laboratory/Government Facilities (1 Vote)	5%
Owner/Operator (3 Votes)	16%
Society (1 Vote)	5%
Vendor (4 Votes)	21%
TOTAL VOTES (19)	100%

5/24/2018

In 2010, the Standards Board approved two DOE votes with the rationale that one works for DOE Environment Management (in their operational office) and the other for DOE Health and Safety (in their regulatory development office).

American Nuclear Society

Nuclear Criticality Safety Consensus Committee

Balance of Interest (June 2018)

Consultant (1 Vote)	
*Taylor, Richard	C.S. Engineering, Inc.
*Bartholomay, Roger	C.S. Engineering, Inc.

Government Agency (3 Votes)	
Berg, Lawrence	U.S. Department of Energy
Marenchin, Thomas	U.S. Nuclear Regulatory Commission
Wilson, Robert	U.S. Department of Energy

Individual (1 vote)	
Hopper, Calvin	Individual

National Laboratory/Government Facilities (3 Votes)	
Bowen, Douglas (subcommittee chair)	Oak Ridge National Laboratory
Kimball, Kevin	Consolidated Nuclear Security, LLC
Miller, John	Sandia National Laboratories

Society (3 Votes)	
Eby, Robert	AIChE Rep. (Navarro Research & Engineering)
Knief, Ronald	INMM Rep. (Employed by Sandia Nat'l Laboratories)
Murray, Scott	HPS Rep. (Employed by General Electric)

University (1 Vote)	
Busch, Robert	University of New Mexico

Vendor (3 Votes)	
Doane, William	Framatome
Shackelford, William (NCSCC Vice Chair)	Nuclear Fuel Services, Inc.
Wetzel, Larry (NCSCC Chair)	BWX Technologies, Inc.

**shares one vote*

Voting Summary

Consultant (1 Vote)	7%
Government Agency (3 Votes)	20%
Individual (1 vote)	7%
National Laboratory/Government Facilities (3 Votes)	20%
Society (3 Votes)	20%
University (1 Vote)	7%
Vendor (3 Votes)	20%
TOTAL VOTES (15)	100%

5/18/2018

American Nuclear Society

Nonreactor Nuclear Facilities Consensus Committee

Balance of Interest (June 2018)

Architect-Engineer (2 Votes)

Anselmi, Todd	Enercon Services
Eble, Robert	AREVA Inc.

Consultant (2 Votes)

Gupta, Mukesh	AECOM-Professional Solutions
Mazzola, Carl	Project Enhancement Corporation

Government Agency (3 Votes)

Kazban, Roman	Defense Nuclear Facilities Safety Board
Kotzalas, Margie	U.S. Nuclear Regulatory Commission
O'Brien, James (NRNFCC Chair)	U.S. Department of Energy

Individual (3 Votes)

Brault, Jeffery (NRNFCC Vice Chair)	Individual
Hicks, Jerry	Individual
Massie, Herbert	Individual

National Laboratory (2 Votes)

Bari, Robert	Brookhaven National Laboratory
Martin, Charles	National Security Technologies

University (1 Vote)

Modarres, Mohammad	University of Maryland

Vendor (1 Vote)

Miller, James	SABIA, Inc.

Voting Summary

Architect-Engineer (2 Votes)	14%
Consultant (2 Votes)	14%
Government Agency (3 Votes)	21%
Individual (3 Votes)	21%
National Laboratory (2 Votes)	14%
University (1 Vote)	7%
Vendor (1 Vote)	7%
TOTAL VOTES (14)	100%

5/16/2018

American Nuclear Society

Research and Advanced Reactors Consensus Committee

Balance of Interest (June 2018)

Architect-Engineer (1 Vote)

Peres, Mark	Fluor Enterprises Inc.

Government Agency (3 Votes)

*Adams Jr., Alexander	U.S. Nuclear Regulatory Commission
*Mazza, Jan; U.S. Nuclear Regulatory Commission	
Lawson, David	U.S. Department of Energy
Thomas, Newton (RARCC VC & SubC Chair)	National Institute of Standards Technology

Individual (3 Votes)

Carter, Robert	Individual
Grimes, Brian	Individual
Turk, Richard	Individual

National Laboratory/Government Facilities (2 Votes)

*Flanagan, George (RARCC Chair)	Oak Ridge National Laboratory
*Bevard, Bruce (RARCC VC & Subcommittee Chair); Oak Ridge National Laboratory	
*Linn, Mark; Oak Ridge National Laboratory	
O'Kelly, Sean	Idaho National Laboratory

Owner (2 Votes)

*August, James	Southern Company
*Afzali, Amir; Southern Company	
Grenci, Tony	Salt River Project

University (3 Votes)

Foyto, Leslie	University of Missouri
Memmott, Matthew	Brigham Young University
Reese, Steven	Oregon State University

Vendor (2 Votes)

Blandford, Edward	Kairos Power
Veca, Anthony	General Atomics

**Shares vote with member(s) from same company.*

Voting Summary

Architect-Engineer (1 Vote)	6%
Government Agency (3 Votes)	19%
Individual (3 Votes)	19%
National Laboratory/Government Facilities (2 Votes)	13%
Owner (2 Votes)	13%
University (3 Votes)	19%
Vendor (2 Votes)	13%
TOTAL VOTES (16)	100%

5/16/2018

American Nuclear Society

Safety and Radiological Analyses Consensus Committee

Balance of Interest (June 2018)

Architect-Engineer (2 Votes)

Hulse, Paul (Subcommittee Chair)	Sellafield Ltd.
Jarvis, Julie (SRACC Vice Chair)	Bechtel Corporation

Consultant (2 Votes)

Gupta, Mukesh	AECOM- Professional Solutions
Rombough, Charles	CTR Technical Services, Inc.

Government Agency (1 Vote)

Palmrose, Donald	U.S. Nuclear Regulatory Commission

Individual (2 Votes)

Amato, Richard	Individual
Weitzberg, Abraham	Individual

National Laboratory/Government Facilities (3 Votes)

Cokinos, Dimitrios (Subcommittee Chair)	Brookhaven National Laboratory
Dudziak, Donald	Los Alamos National Laboratory
Smetana, Andrew (SRACC Chair)	Savannah River National Laboratory

Society (1 Vote)

Graham, Christopher	HPS Rep. (Employed by Ameren)

University (2 Votes)

Hertel, Nolan	Georgia Institute of Technology
Sanders, Charlotta (Subcommitte Chair)	University of Nevada, Las Vegas

Vendor (1 Vote)

Alpan, F. Arzu	Westinghouse Electric Company, LLC

Voting Summary

Architect-Engineer (2 Votes)	14%
Consultant (2 Votes)	14%
Government Agency (1 Vote)	7%
Individual (2 Votes)	14%
National Laboratory/Government Facilities (3 Votes)	21%
Society (1 Vote)	7%
University (2 Votes)	14%
Vendor (1 Vote)	7%
TOTAL VOTES (14)	100%

5/16/2018

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

ATTACHMENT 5

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. Develop the Risk-Informed Performance-Based Principles and Policy Committee Operating Plan 2. Develop a Risk-Informed Performance-Based Principles training package for training of ANS Standards Committee members. 3. Conduct training of consensus committees and working groups. 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	RP3C Chair	Provide draft of Risk-Informed Performance-Based Principles and Policy Committee Operating Plan for SB approval.	Draft plan provided for info 11/2017.	9/30/2017	
	RP3C Chair	Provide resolution of SB comments and issue plan CC ballot.		12/1/2017	
	RP3C Chair	Develop priority list of standards and schedule for incorporation of RP3C principles.	Initial draft list of potential potential risk informed and performance based standards provided 11/2017..	9/30/2017	
	RP3C Chair	*Nuclear News* (*NN*) article drafted, approved by SB Chair, and forwarded to *NN* editor.		11/1/2017	

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
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. 5. Publishing a Nuclear News Article to inform other members of the Society of the benefits of this risk-informed and performance-based effort 6. Developing presentation materials that can be used to inform other industry groups as to the benefits and use of the ANS Standards Committee risk-informed and performance based standards activities	RP3C Chair	Develop Risk-Informed and Performance-Based Training Package for SC members and provide to SB for review.	To be developed in parallel with plan finalization	12/1/2017	
	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	3/1/2018	
	RP3C Chair	Contact appropriate organizations to make presentations at NRC RIC, ANS UWC, and owners' groups.		7/1/2018	
	RP3C Chair	Make presentations at a minimum of 2 groups.		10/1/2018	
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	

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
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
	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	
	CC Chair	In cases where additional assistance is required beyond the SubC Chair, CC should request mentor	None identified yet	Chairs have been advised.	11/1/2017

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
		from SB VChair.			
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	Project plan development policy approved by SB.		12/1/2016	
	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.	1/25/17: 5 plans have been developed to date.(2.27, 54.1, 2.25, 2.29, and the JCNRM milestone schedule) NRNCC to develop 2 plans for standards in progress.	6/1/2017	
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.	Pat sent a follow up message just last Monday (5/14/18) to J. Koblich (IT). Sslide about the database added to the draft BOD presentation I prepared for Steven Arndt.	11/1/2017	
	ANS IT Dept.	SB approves database submitted by ANS IT department.		2/1/2018	

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

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 - ?? LL\WRCC?? NCSCC - Done NRNCC - ?? 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(12/31/17) FWDCC - ?? LWRCC - ?? NCSCC - None NRNFCC None RARCC - ANS 20.1, 20.2, 30.1 and 30.2 SRACC - None	Ongoing	
	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	

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
F. Streamline the reaffirmation process to reduce the number of delinquent standards by 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	Submit Reaffirmation Forms to WG/SubC Chairs for all standards approaching the 4-year mark.		Ongoing Starting 4/1/2016	Ongpoing
	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	
	CC Chair & Policy	Provide recommendations for changes to improve	11/2017:	6/1/2018	

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
	TG Chair	performance.	ESCC- None		
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.	1/25/17: Members recognized that the EC TG Chair position was open and no action has been taken.	10/1/2016	
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

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
	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 Communications TG	Complete interface plan implementation.		6/1/2018	
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	Send indoctrination session invitations.		10/1/2016	sent via Jan 2017 N&D,

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
	TG				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 been taken.	11/1/2016	
	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		8/3/2016	Several calls

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
		revise plan as appropriate.			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.
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, announced in Sept. 2016 N&D and distributed through ANS Collaborate to PDs.	Ongoing	
A. 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	
B. Enhance the relationships with the ANS Professional Divisions and Technical Groups to assist in populating WGs with expert individuals.(See Goal #1)		.(See Goal #1)			
C. Advertise upcoming standards efforts with requests for support using *Nuclear News*, Nuclear Café, and ANS Linked-In Group	Standards Mgr	Advertise upcoming standards efforts with requests for support using *Nuclear News*, Nuclear Café, and ANS	Volunteer needs section added to *Nuclear News*. List	Ongoing	

SMART Matrix for ANS SC Strategic Plan – Updated 5/31/2018

Initiative	Assigned Responsibility (Functional Title)	Specific Action Items Needed to Accomplish the Initiative	Status/ Comments	Scheduled Completion Date	Actual Completion Date
		Linked-In Group.	of volunteer needs updated and posted to web and announced in N&D.		
D. ANS IT Department to complete the Standards Volunteer Database, and make it available to subcommittee and consensus committee chairs (See Goal #3)		(See Goal #3)			
E. Monitor consensus committee and working group success in staffing and recruitment and share best practices across all consensus committees	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
	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		6/30/2018+ Ongoing	

ATTACHMENT 6
2017 CC Performance Evaluation

2017 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)	>80%	50% to 79%	<50%	**63.2%** (1 meeting & 2 calls)	**77.8%** (1 meeting & 2 calls)	**58.6%** (1 meeting & 3 calls)	**71.4%** (1 meeting)	**71.4%** (1 meeting)	**68.8%** (1 meeting)	**57.1%** (1 meeting)
Number of new active standards initiated (% increase in assigned standards)	>5%	2% to 5%	<2%	**15.4%** (2.10 & 2.34)	**0%**	**15.3%** (30.3 & 59.3)	**0%**	**0%**	**0%**	**0%**
Number of standards greater than 8 years since last issuance	0%	0.1% to 5%	>5%	**0%**	**0%**	**15.3%** (3.5 & 51.10)	**0%**	**0%**	**0%**	**0%**
Average CC member ballot participation	>90%	80% to 90%	<80%	**78.0%**	**84.0%**	**84.5%**	**88.9%**	**71.4%**	**84.6%**	**74.5%**
Average time to staff WGs and draft new standards	<24 months	24 to 36 months	> 36 months	**NA**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
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	**18 days** (2.10) (L1)	**5.5 months** (57.3) (L1)	**+12 months** (3.5 & 51.10) (both L2)	**16 weeks** (8.24)(L1)	**N/A**	**N/A**	**5 weeks** (19.4 & 19.11) (both L1)
Average time to respond to an inquiry	< 4 months	4 to 8 months	>8 months	**3 months & 3 weeks** (3.11)	**26 months** (55.1/55.6)	**N/A**	**N/A**	**N/A**	**N/A**	**3 months**

Notes:

1. The above metrics were selected as the most important by the Policy Task Group. Changes from the SB meeting of 11/8/16 have been included.
2. 2016 & 2017 will be used as a trial year.
3. Use of these metrics should be used as a baseline for improvement. Very good performance should lead to some type of meaningful recognition by the SB. The goal of the performance metrics is to improve the response times and performance of the SC to the needs of the industry. Each December, the Standards Manager will complete those sections assigned to that position and send to the CC chairs which will complete the matrix, clarify areas where data is not representative, and identify steps to be taken to improve performance in identified fair and poor areas. If a specific metric was not applicable to a CC they would not be evaluated for that item.

2016 All CC Performance Metrics Summary

Strategic Plan Activity 3.G

ATTACHMENT 7
2016 CC Performance Evaluation
(for reference)

Performance Metric	Good (Green)	Fair (Yellow)	Poor (Red)	ESCC	FWDCC	LLWRCC	NCSCC	NRNFCC	RARCC	SRACC
CC Meeting Attendance (Calendar year)	>80%	50% to 79%	<50%	70.5%	70.2%	66.1% (3 meetings held 11/6/16)	53.3% (1 meeting held 11/7/16)	60.0% (1 teleconference held 9/29/16)	58.8% (1 meeting held 11/7/16)	62.5% (1 meeting held 11/6/16)
Number of new active standards initiated (% increase in assigned standards)	>5%	2% to 5%	<2%	8% PINS submitted for ANS-2.6	0% No new PINS submitted	0% (1 of 20) PINS are in development for several new projects	0% No new PINS submitted	0% No new PINS submitted	20% PINS submitted for ANS-20.2 & ANS-30.2 in 2016.	5% (1 of 20) PINS submitted for historical rev of ANS-19.4
Number of standards greater than 8 years since last issuance	0%	0.1% to 5%	>5%	0%	28.6%	23.1 % (3 of 13) ANS-51.1, ANS-58.3, ANS-58.8	0%	0%	0%	5% (1 of 20) (1 standard – ANS-19.3.4-2002;R2008)
Average CC member ballot participation	>90%	80% to 90%	<80%	74.9%	75.1%	79.9%	79.2%	74.0%	81.3%	74.3%
Average time to staff WGs and draft new standards	<24 months	24 to 36 months	> 36 months	N/A No NEW standards issued for ballot	N/A No NEW standards issued for ballot	N/A No NEW standards issued for ballot	**N/A** No **NEW** standards issued for ballot	N/A No NEW standards issued for ballot	N/A No NEW standards issued for ballot	N/A No NEW standards issued for ballot
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	ANS-2.2 = 2 days (L1) ANS-2.23 = 5 weeks (L2) ANS-2.8 = NA as it is still resolving comments	ANS-57.3 = +10 weeks at close of year (L1)	Average ballot comment resolution time ~13 months	**N/A** No ballots of draft standards issued in 2016	N/A No ballots of draft standards issued in 2016	ANS-15.4 = 0 days (L1) ANS-15.44 = 3 weeks (L1)	N/A Only reaffirmation ballots issued in 2016
Average time to respond to an inquiry	< 4 months	4 to 8 months	>8 months	ANS-3.11-2015 response issued in 5 months	+23 months for ANS-55.1/55.6	Response to inquiry on ANS-3.4 issued 3/11/16 in ~5 months	**N/A** No inquiries received	N/A No inquiries received	N/A No inquiries received	N/A No inquiries received

Notes:

1. The above metrics were selected as the most important by the Policy Task Group. Changes from the SB meeting of 11/8/16 have been included.
2. 2016 will be used as a trial year.
3. Use of these metrics should be used as a baseline for improvement. Very good performance should lead to some type of meaningful recognition by the SB. The goal of the performance metrics is to improve the response times and performance of the SC to the needs of the industry. Each December, the Standards Manager will complete those sections assigned to that position and send to the CC chairs which will complete the matrix, clarify areas where data is not representative, and identify steps to be taken to improve performance in identified fair and poor areas. If a specific metric was not applicable to a CC they would not be evaluated for that item.

ATTACHMENT 8
D. Spellman Comments on CC Performance Evaluation

Pat Schroeder

From: Steve Stamm <ssn617@comcast.net>
Sent: Thursday, May 24, 2018 10:50 AM
To: Don Eggett; steven.arndt@nrc.gov
Cc: Pat Schroeder; 'Donald Spellman'
Subject: FW: [Sb] Consensus Committee Combined Evaluation Summary

Don & Steve

Don Spellman had done an assessment of the CC Performance Metrics and offered the below observations. I think that it would be worthwhile to discuss these at the June SB meeting and get CC feedback..

Steve Stamm

Results of comparing 2016 and 2017 CC Performance Matrices (DJS) (3/2018):

1. ESCC has maintained its performance record as the best of the CCs
2. FWDCC has maintained a poor performance record particularly in lack of new standards, length of ballot resolutions, and time to respond to inquiries
3. LLWRC has also shown poor performance as a group but slightly improved in 2017 for new standards and ballot participation. Their above average meetings and telecoms should have helped this situation. May need to focus those calls more on getting results.
4. NCSCC has not improved in the number of new standards. Is this an indication that this CC has gone as far as it can go for existing facilities?
5. NRNFCC really needs to get to work. This in one CC that has a lot of room to expand but has not done so. N/A in standard drafting time, ballot resolution time, and response to inquiries is sign that this CC is not keeping up.
6. RARCC has fallen WAY behind in 2017 from 2016. Reason? Suspect this might get going better in 2018 due to the ANS/NRC/NEI meeting in May 2018.
7. SRACC has also done a mediocre job both years. Low meeting attendance is probably due to the fact that they are not doing much.

ATTACHMENT 9
CC Performance Metric
Change Recommendations

CC Performance Metrics Evaluation and Recommendations

Strategic Plan Activity 3.G

Performance Metric	Good (Green)	Fair (Yellow)	Poor (Red)	2016 Evaluation Results	2017 Evaluation Results	Recommend ations
CC Meeting Attendance (Calendar year)	>80%	50% to 79%	<50%	CC evaluations ranged from 53.3% to 70.5%. All were in the FAIR range. Average was 63.1%	CC evaluations ranged from 57.1% to 77.85%. All were in the FAIR range. Average was 66.9%	Change to: GOOD>75%; FAIR 55 to 75% POOR <55%
Number of new active standards initiated (% increase in assigned standards)	>5%	2% to 5%	<2%	Evaluations ranged from 0% to 20% with Four CCs at Zero; two as GOOD and one as FAIR.	Evaluations ranged from 0% to 15.4% with Five CCs at Zero; two as GOOD.	None
Number of standards greater than 8 years since last issuance	0%	0.1% to 5%	>5%	Evaluations ranged from 0% to 28.6% with: 4 @ 0% GOOD 1 FAIR 2 POOR	Evaluations ranged from 0% to 15.3% with: 6 @ 0% GOOD 0 FAIR 1 POOR	None
Average CC member ballot participation	>90%	80% to 90%	<80%	Evaluations ranged from 74.3% to 79.9% (Ave.=77%) with: 0 GOOD 1 FAIR 6 POOR	Evaluations ranged from 71.4% to 88.9%:(Ave.=80.8%) 0 GOOD 4 FAIR 3 POOR	Change to: GOOD > 83% FAIR 73 to 83% POOR <73%
Average time to staff WGs and draft new standards	<24 months	24 to 36 months	> 36 months	There was no data on this metric this year: 7 NA	There was no data on this metric this year: 7 NA	Re-evaluate next year
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	Evaluations ranged from 0 days to 13 months with: 2 GOOD 0 FAIR 2 POOR 3 NA	Evaluations ranged from180 days to 12+ months with: 1 GOOD 1 FAIR 3 POOR 2 NA	None
Average time to respond to an inquiry	< 4 months	4 to 8 months	>8 months	Evaluations ranged from 5 to 23 months with 0 GOOD 2 FAIR 1 POOR 4 NA	Evaluations ranged from 3 to 26 months with 2 GOOD 0 FAIR 1 POOR 4 NA	None We need to continue to improve our performance in this area.

ATTACHMENT 10
Open items from NRC Standards Forum

Preparation for Next NRC Standards Forum – Anticipated September 2018
The September 2017 NRC Standards Forum meeting summary and associated enclosures are accessible on the NRC Standards Website at https://www.nrc.gov/about-nrc/regulatory/standards-dev/standards-forum.html. (scroll to the bottom for the Summary)

Enclosure 3 – Detailed Meeting Summary
The meeting summary states that George Flanagan reported that ANS is looking to work with EPRI on an emergency planning zone (EPZ) standard but has not starting working on it yet. (NOTE form Pat: I believe that Carl Mazzola was initially identified as the ANS contact but that this was subsequently corrected to Gene Carpenter as the LLWRCC chair which oversees the Emergency Planning & Response Subcommittee.)

Enclosure 4 – Meeting Action Items (for ANS)

- #1 – opportunity to volunteer as a coalition member for standards development activities that are identified on Enclosure 5.
- #2 – All SDOs review gap analysis on SFRs presented by ORNL and the identification of standards needed by TWGs. SDOs to identify which of identified standards and topics to consider for revision or development.
- #3 – ANS to organize a workshop for advanced reactors to focus on standards development.
- #4 – opportunity to provide input on topics that were discussed and tracked during the NESCC meetings as presented in Enclosure 6.

Enclosure 7 – List of Standards Identified for SFRs
List to be reviewed for action on ANS standards or championing identified needs. ANS standards identified include:

- ANSI/ANS-3.1-2014, “Selection, Qualification, and Training of Personnel for Nuclear Power Plants
- ANS-56.2-1984 (N271), “Containment Isolation Provisions for Fluid Systems”
- ANSI/ANS-6.4-2006 (R2016), “Nuclear Analysis and Design of Concrete Radiation Shielding for Nuclear Power Plants”
- ANSI/ANS-3.2-2012 (R2017), “Managerial, Administrative, and Quality Assurance Controls for the Operational Phase of Nuclear Power Plants
- ANSI/ANS-3.5-2009, “Nuclear Power Plant Simulators for Use in Operator Training and Examination”
- ANSI/ANS-5.1-2014, “Decay Heat Power in Light Water Reactors”

ATTACHMENT 11
CSSG Request 1

AMERICAN NUCLEAR SOCIETY
STANDARDS INQUIRY SUBMITTAL FORM

The American Nuclear Society (ANS) Standards Committee will provide responses to inquiries about requirements, recommendations, and/or permissive statements (i.e., "shall," "should," and "may," respectively) in American National Standards that are developed and approved by ANS. Responses to inquiries will be provided according to the Policy Manual for the ANS Standards Committee. Non relevant inquiries or those concerning unrelated subjects will be returned with appropriate explanation. ANS does not develop case interpretations of requirements in a standard that are applicable to a specific design, operation, facility, or other unique situation only, and therefore is not intended for generic application.

Responses to inquiries on standards are published in the Society's magazine, *Nuclear News*, and are available publicly on the ANS Web site or by contacting the ANS Standards Administrator.

The following information must be provided when submitting a standards inquiry.

Date Inquiry Submitted to ANS: 02/15/2018

INQUIRER

Name:	David Erickson
Company or Institutional Affiliation: (if applicable)	DOE Criticality Safety Support Group
Title or Position:	CSSG Chair
Address:	

Telephone: 803-557-9445 E-mail: david.erickson@srs.gov

THE APPLICABLE STANDARD EDITION, SECTION, PARAGRAPH, FIGURE AND/OR TABLE:

ANS-8.1-2014; ANS-8.10-2015; ANS-8.23-2007

PURPOSE(S) OF THE INQUIRY:

The Criticality Safety Support Group requests that the NCSCC/ANS-8 develop and document an over-arching philosophy policy addressing risk/benefit considerations both when operations personnel are at risk of significant radiation exposure as the result of a criticality accident and when they are not at risk of significant radiation exposure. Relatedly, the CSSG requests that guidance be provided in ANS-8.1 and ANS-8.10 that clarifies when this guidance applies. Currently there is not agreement within the practitioner and regulatory community as to: 1) the application of ANS-8.10 for situations such as when evacuation removes personnel from the site of a potentially developing criticality accident; and 2) the application of ANS-8.1 and ANS-8.10 guidance during re-entry and recovery actions, discussed in ANS-8.23, subsequent to an initiating event such as a fire or earthquake.

THE INQUIRY STATED IN A CLEAR, CONCISE MANNER:

ANS-8.1 and ANS-8.10 provide a few general statements concerning criticality accident risk/benefit philosophy:
• “Good safety practices should recognize economic considerations, but the protection of operating personnel and the public is the dominant consideration.”
• “Nuclear criticality safety differs in no intrinsic way from industrial safety and good managerial practices apply to both.”
• “Distinction may be made between shielded and unshielded facilities, and the criteria may be less stringent when adequate shielding and confinement assure the protection of personnel.”
• “If personnel are located remotely from the fissile and fissionable materials, distance may serve in lieu of some or all of the shielding, provided personnel entry into the intervening space is constrained ...”

However, in the Foreword of ANS-8.1 it states: "... does not incorporate the concepts of generating risk-informed insights, performance-based requirements, or a graded approach to quality assurance."
An over-arching risk/benefit philosophy statement, addressing both when personnel are and are not at risk of significant radiation exposure from a criticality accident needs to be developed and included in ANS-8.1. The ramifications of this policy statement will have implications for additional or changed guidance in ANS-8.1; ANS-8.10; and ANS-8.23 and possibly other ANS-8 standards.

A PROPOSED REPLY, IF THE INQUIRER IS IN A POSITION TO OFFER ONE:

See the attached CSSG report 2016-04, Position of the CSSG on Natural Phenomena and Other Extreme Events vis-a-vis ANSI/ANS-8 Standards.

URGENCY (Check One):

☐ Need within 3 months

☑ No immediate urgency

☐ Need by (date): _____

Basis for urgency:

INQUIRIES SHOULD BE ADDRESSED TO:

American Nuclear Society, ATTN: Standards Administrator
555 N. Kensington Avenue; La Grange Park, IL; 60526; or standards@ans.org

ATTACHMENT 12
CSSG Request 2

AMERICAN NUCLEAR SOCIETY
STANDARDS INQUIRY SUBMITTAL FORM

The American Nuclear Society (ANS) Standards Committee will provide responses to inquiries about requirements, recommendations, and/or permissive statements (i.e., "shall," "should," and "may," respectively) in American National Standards that are developed and approved by ANS. Responses to inquiries will be provided according to the Policy Manual for the ANS Standards Committee. Non relevant inquiries or those concerning unrelated subjects will be returned with appropriate explanation. ANS does not develop case interpretations of requirements in a standard that are applicable to a specific design, operation, facility, or other unique situation only, and therefore is not intended for generic application.

Responses to inquiries on standards are published in the Society's magazine, *Nuclear News*, and are available publicly on the ANS Web site or by contacting the ANS Standards Administrator.

The following information must be provided when submitting a standards inquiry.

Date Inquiry Submitted to ANS: 02/15/2018

INQUIRER

Name:	David Erickson
Company or Institutional Affiliation: (if applicable)	DOE Criticality Safety Support Group
Title or Position:	CSSG Chair
Address:	

Telephone: 803-557-9445 E-mail: david.erickson@srs.gov

THE APPLICABLE STANDARD EDITION, SECTION, PARAGRAPH, FIGURE AND/OR TABLE:

ANS-2.26-2004(R 2010); ANS-58-16-2014; ANS-57-11(under development)

PURPOSE(S) OF THE INQUIRY:

It has been discovered that some ANS (but non-ANS-8) standards contain nuclear criticality safety (NCS) guidance that is judged by the Criticality Safety Support Group to be properly contained only in ANS-8 standards and that in some cases this guidance is seemingly inconsistent with ANS-8 philosophy. Any criticality safety guidance found in non-ANS-8 standards should be vetted through the NCSCC to either bring the guidance into the appropriate ANS-8 standards or to assure compatibility with the over-arching philosophy of the ANS-8 standards.

THE INQUIRY STATED IN A CLEAR, CONCISE MANNER:

ANS Standards has designated the NCSCC as the expert committee overseeing the development, review and approval of criticality guidance. It has recently been found that some non-ANS-8 standards now include nuclear criticality safety guidance that has not been developed, reviewed and approved by appropriate subject matter experts. This is contrary to ANS Standards policy and must be rectified. The logical solution to this situation is by vetting this guidance through the NCSCC to either bring the guidance into the appropriate ANS-8 standards or to assure compatibility with the over-arching philosophy of the ANS-8 standards.

A PROPOSED REPLY, IF THE INQUIRER IS IN A POSITION TO OFFER ONE:

See the attached CSSG report 2016-04, Position of the CSSG on Natural Phenomena and Other Extreme Events vis-a-vis ANSI/ANS-8 Standards.

URGENCY (Check One):

☐ Need within 3 months

☑ No immediate urgency

☐ Need by (date): _____

Basis for urgency:

INQUIRIES SHOULD BE ADDRESSED TO:

American Nuclear Society, ATTN: Standards Administrator
555 N. Kensington Avenue; La Grange Park, IL; 60526; or standards@ans.org

ATTACHMENT 13
L. Wetzel Proposal

Proposal for the Standards Board

Larry L. Wetzel, NCSCC Chair

I propose that the review process for standards be revised to incorporate the following:

> When a new or revised standard is ready for a CC review, all CC chairs will receive a copy. They will have 15 days to decide if their CC has interest in the standard.
>
> After the 15 days, the primary CC will be issued the standard for ballot. Any interested CCs will also be issued the standard on a secondary ballot. Review by secondary CCs is to be limited to their area of purview. The ballot will remain open for 45 days. (This is a reduction of 15 day, but keeps the total review time at 60 days.)
>
> The comments from the primary and secondary ballots shall be provided to the WG for resolution. The resolutions will be provided to all who provided comments. A recirculation ballot would be issued to the primary CC which would include all unresolved comments that are the basis of a maintained objection.
>
> Consensus is based on the votes from the primary CC. The process from this point on remains the same.

This change ensures that if a standard has requirements or recommendations in areas that are normally the purview of another CC, that that those requirements or recommendations are reviewed by experts in that discipline. Currently, there is no formal method to ensure this type of review. Without this type of review, incorrect or conflicting guidance may be issued.

ATTACHMENT 14

Excerpt of Proposed Changes to the ANS Standards Committee Procedures Manual for Consensus Committees

4.1 Officers

The officers of a consensus committee shall consist of a Chair, Vice-Chair, and Secretary. The Chair and Vice-Chair shall be members of the committee and are elected by the main body of the committee for terms of three years.

4.1.1 Consensus Committee Chair Role

The primary role of a Consensus Committee Chair is to provide effective leadership and direction to the consensus committee, its Subcommittee Chairs and Vice Chairs, and, at times, Working Group Chairs relative to day-to-day standards activities; as well as addressing various administrative and personnel issues. Consensus Committee Chairs are responsible for establishing meeting agendas and conducting all meetings of the consensus committee, for providing management and technical advice to various standards working groups, for resolving conflicts between consensus committee membership and working groups, for periodically informing the Standards Board and the Standards Manager of all significant committee activities and project status, and for requesting advice from the Standards Board on policy matters. Consensus Committee Chairs shall be attentive to all requests and questions related to the responsibilities of this role. Consensus Committee Chairs shall be members of the ANS and are ex officio members of the Standards Board. Specific responsibilities and expectations include the following:

- Participate in Standards Board meetings and provide a detailed report of consensus committee activities
- Assure consensus committee use and compliance of all Standards Committee rules, policies, procedures and toolkit
- Vote on Standards Board ballots and motions
- Review Standards prior to CC ballot to determine if the concensus committee needs to ballot on the standard
- Schedule and chair consensus committee meetings (physical or remote) at least ~~twice~~ once per year
- Plan, schedule, prioritize and oversee the work of the consensus committee
- Solicit consensus committee members as needed to assure proper balance of interests
- Invite/assign liaison members to promote interfaces with other organizations as needed to facilitate the consensus committee activities
- Notify ANS headquarters of consensus committee appointments, resignations, etc.
- Review performance of consensus committee members relative to voting and attendance criteria and resolve delinquencies in a professional manner
- Appoint Subcommittee Chairs and Vice Chairs when needed
- Provide guidance to new Subcommittee Chairs and Vice Chairs in the execution of their duties

5.0 CONSENSUS COMMITTEE CONDUCT OF BUSINESS

5.1 Quorum and Meeting Requirements

The consensus committees should meet either physically or remotely (teleconference) at least twice in each calendar year and members are expected to participate at all meetings. The meetings will be attempted to be coordinated with the Society's Annual and Winter Meetings. When it is not possible to attend (physically or remotely) a particular meeting, the member is expected to be represented by a designated alternate, who shall have all the privileges and obligations including casting of votes for the member only during the period of service in this capacity.

Meetings will be conducted in accordance with Roberts Rules of Order. A quorum shall be present for the consensus committee to conduct a formal vote. A quorum consists of over 50% (i.e., simple majority) of the voting membership of the committee.

When discussion indicates a pronounced difference of opinion on any question, the Consensus Committee Chair shall call for a formal vote and that vote shall be recorded in the minutes. An affirmative vote requires a simple majority of those present at a meeting voting in favor. A simple majority of those present applies to all official actions except the consensus balloting on standards, which shall meet the requirements of Article 5.6 of the *ANS Standards Committee Rules and Procedures*.

5.2 Schedule for Review/Ballot of Proposed Standards

The CC chairs have fifteen (15) days to determine if their CC should review the proposed standard. The time provided to consensus committee members for review or to ballot a proposed standard should be ~~sixty~~ forty five (~~60~~45) days. The Consensus Committee Chair may, if necessary, shorten the period for the ballot review (e.g., thirty (30) days) if the committee had recently reviewed an earlier draft and/or if there is a substantial demand for the standard by the user community.

ATTACHMENT 15

Liaisons to ANS Professional Divisions—Updated 4/13/18

= unconfirmed

ANS Professional Division	Name of PD Liaison	Email of PD Liaison	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	NRNFCC	James O'Brien	James.OBrien@hq.doe.gov
Aerospace Nuclear Science & Technology	Andy Prichard	Andrew.Prichard@pnnl.gov	*		
Biology & Medicine	Robert Gregory(Greg) Downing	gregory.downing@nist.gov	ESCC ANS-3.4	Carl Mazzola (ESCC) William Reuland (ANS-3.4)	cmazzola@projectenhancement.com wreuland@aol.com
Decommissioning & Environmental Sciences	Dustin Miller	dmiller@chaseenv.com	FWDCC ESCC	David Hillyer (FWDCC-temp) Carl Mazzola (ESCC)	dwhillyer@hotmail.com cmazzola@projectenhancement.com
Education, Training, & Workspace Development	Marsha Bala	Marsha.bala@inl.gov	LLWRCC NCSCC	Gene Carpenter (LLWRCC) Robert Busch (NCSCC)	Gene.Carpenter@hq.doe.gov busch@unm.edu
Fuel Cycle & Waste Management	Jeffery R. Brault	jeff_brault@yahoo.com	FWDCC	Jeffery Brault	jeff_brault@yahoo.com
Fusion Energy	Leigh Winfrey	winfrey@mse.ufl.edu	RARCC	George Flannagan	flanagangf@ornl.gov
Human Factors, Instrumentation & Controls	Sean Smith	sean.smith.eng@gmail.com	LLWRCC	Pranab K. Guha	pranab.guha@hq.doe.gov
Isotopes & Radiation	Robert Zboray	rzz65@engr.psu.edu	SRACC	Charlotta Sanders	sander59@unlv.nevada.edu
Materials Science & Technology	Micah Hackett	micahjhackett@gmail.com	**		
Mathematics & Computation	Paul Hulse	paul.hulse@sellafieldsites.com	SRACC	Paul Hulse	paul.hulse@sellafieldsites.com
Nuclear Criticality Safety**	Deborah Hill	deborah.a.hill@nnl.co.uk	NCSCC	Doug Bowen	bowendg@ornl.gov
Nuclear Installations Safety	Ma Zhegang Kevin O'Kula Matthew Denman	zhegang.ma@inl.gov kevin.okula@aecom.com> mrdenma@sandia.gov	RARCC NRNFCC JCNRM	George Flanagan (RARCC) James O'Brien (NRNFCC) Robert Budnitz (JCNRM)	flanagangf@ornl.gov James.OBrien@hq.doe.gov budnitz@pacbell.net
Nuclear Nonproliferation Policy	Margaret Harding	margaret@4factorconsulting.com	ANS-60.1	Margaret Harding	margaret@4factorconsulting.com
Operations & Power	Scott Ackerman	scott_ackerman@att.net	LLWRCC	Gene Carpenter	Gene.Carpenter@hq.doe.gov
Radiation Protection & Shielding	Michele Sutton Ferenci	mferenci@hmc.psu.edu	SRACC	Charlotta Sanders	sander59@unlv.nevada.edu
Reactor Physics	Dimitrios Cokinos	cokinos@bnl.gov	SRACC	Dimitrios Cokinos	cokinos@bnl.gov
Robotics & Remote Systems	Mitch W. Pryor	mpryor@utexas.edu	NRNFCC FWDCC	Jeffery Brault (NRNFCC) Jeffery Brault (FWDCC)	jeff_brault@yahoo.com
Thermal Hydraulics	Charles Martin	MartinCR@nv.doe.gov	NRNFCC	Charles Martin (NRNFCC)	MartinCR@nv.doe.gov

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

**NOTE: PD chair = PD liaison

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 16

Associate Member Log (Updated 6/3/18)

	Name	Email	Solicitation or Random	Date VF Rec'd	PLACEMENT	COMMENTS
1	Chelsea Sutton (Maiden Name: Weaver	clynne21@gmail.com ; clynne21@lanl.gov	Not sure but on 8.3 since 2014	NO	8.3	4/25/17: Resigned from 8.3 as no longer in NCS. Currently works in weapon systems surveillance and requirements. Confirmed w/S. Stamm that we do not have any standards in this area to reassign. Moved to inactive. Placed/recruited by WGC; VF/resume requested.
2	Chelsea Collins	chelseatcollins@ufl.edu	Student Section Solicitation 2014	8/13/2014	8.3	3/26/16: Graduated from UFL and employed with FPL - No longer interested inparticipating.
3	Joseph (Joe) Kopacz	jkopacz@iastate.edu	Student Section Solicitation 2014	8/12/2014	3.13	NO LONGER ACTIVE; email no longer good; no response from multiple attempts to reach using alternate email -DEACTIVATES
4	Margaret Kurtts	mkurtts@vols.utk.edu	Student Section Solicitation 2014	8/12/2014	ANS-30.2	11/22/16: A. Afzali accepted Kurtts & Kurtts notified. 11/21/16: Sent request to ANS-30.2 WGC to consider as assoc. member after response from Kurtts expressing interest in ANS-30.2 & other ANS-29 standards; also some interest in ANS-19.4 & ANS-19.5. 11/11/16: Sent followup email offering reassignment now or anytime in the future. 9/2016: learned that she is no longer active on SC-SM; stop participating because job change not relevant to committee. Offered to faciliate placement on different committee. NOT IN WORKSPACE; USES C&S CONNECT
5	Cailyn Ludwig	ludwig7@purdue.edu	Student Section Solicitation 2014	8/12/2014	3.14	
6	Benjamin (Ben) Prewitt	bjp2n4@mst.edu	Student Section Solicitation 2014	8/12/2014	20.1	
7	Dylan Robideaux	drobi825@gmail.com	Student Section Solicitation 2014	7/24/2014	8.7	
8	Dong (Allen) Wang	wangdong@sdnpc.com	random	7/1/2014	3.5	
9	Manit Shah	manitshahd@gmail.com	Student Section Solicitation 2014	8/12/2014	6.4.3, (past AM of 57.2 & 57.3)	3/22/18: removed from 57.2/57.3 - lack of interest; still on 6.4.3 although not very active; may let us know of other groups of interest at later date-ps. 3/22/18 to M. Shah requesting feedback and offer or reassignment sent; immediate response confirmed no activity due to lack of interes in 57.3; interested in 6.4.3 but not much happening due to health of chair-ps. 3/20/2018: 57.3 WGC said that he has not been activ eon 57.3 Responded to survey that he remains interested but that the 6.4.3 WG had not been active. His interested changed slighly and was added to 57.2/57.3 on 9/9/15.
10	Manish Sharma	mksrkf@mst.edu	Student Section Solicitation 2014	8/12/2014	6.4.3	
11	Gregory Suehr	gregory.suehr@gmail.com	Student Section Solicitation 2014	8/12/2014	57.2/52.73	3/20/2018: 57.3 WGC said that he has not been active on 57.3; email sent 3/22/18 to G. Suehr requesting feedback and offer or reassignment; ANS member records shows that he dropped his membership in 2015-ps. 3/23/18: Deactivated for lack of response; will reassigned if/when requested.
12	Stanley (Stan) Tackett	stackett@insight.rr.com	Student Section Solicitation 2014	8/12/2014	6.4.2	
13	Mara Watson	marawtsn@gmail.com	Student Section Solicitation 2014	8/12/2014	ESCC	Never completed WG user account, absolutely no response to anything since added to ESCC; removed from ESCC & sent offer to facilitate more appropriate placement 5/3/16.
14	Tim Stout	timothy.stout@exeloncorp.com	Random	8/27/2014	ANS-58.9	
15	Mihai Diaconeasa	diacon@ucla.edu	Random	5/7/2014	ANS-30.1	9/19/17: added to 2.34 as requested. 8/25/15: placed on 30.1
16	Matthew Hertel	hertelm@onid.oregonstate.edu	Random	3/31/2015	ANS-59.3 & 58.9	4/10/18: Added to 58.9 as 59.3 has not been very active. 10/1/15: placed on 59.3.
17	Theresa Cutler	tcutler@lanl.gov	Recruited by ANS-8.23 WGC/Baker	10/24/2015	ANS-8.23 8.10	8/3/17: informed by 8.10 WGC A. Prichard that she has also been added to 8.10 as assoc. member.
18	Christopher Courtenay	Christopher.Courtenay@duke-energy.com	YMG Solicitation 2015	11/2015	ANS-2.25	Accepted invite to ANS-2.25, althought not his area of expertise; should be considered on siting standard when initiated
19	Shilp Vasavada	shilp_v@yahoo.com	NAYGM 2015 solicitation	11/18/2015	ANS-3.13	Rec'd invite to 3.13 & accepted same day.

Associate Member Log (Updated 6/3/18)

20	Nima Fathi	nfathi@unm.edu	YMG Solicitation 2015	11/3/2015	ANS-10.4	5/13/17: moved to 10.4 WG; initially placed on ans-10 subc as placeholder; Invitation letter issued 1/6/16 & accepted
21	Paul Romano	paul.k.romano@gmail.com	YMG Solicitation 2015	11/11/2015	ANS-10.4	5/13/17: moved from ans-10 to 10.4; initially placed on subc as placeholder; Invitation letter issued 11/13/16
22	Jeremy Gustafson	jlgustafson@bwxt.com	YMG Solicitation 2015	11/1/2015	ANS-56.8	Letter issued and accepted 1/25/16
23	Kaushik Banerjee	banerjeek@ornl.gov	YMG Solicitation 2015	11/20/2015	ANS-19.6.1	Letter issued and accepted 1/26/16
24	Philip Jensen	phjn123@gmail.com	YMG Solicitation 2015	11/2/2015	ANS-3.14	Letter issued 1/28/16 & accepted
25	Enerel Munkhzul	Enerel.Munkhzul@nexteraenergy.com	YMG Solicitation 2015	1/15/2016	ANS-30.2	Letter issued 1/28/16 & accepted
26	Tracy Stover	tracy.stover@srs.gov	Random	11/3/2015	ANS-8.12	Letter issued 2/26/16 ***NO LONGER ASSOC. MEMBER; CURRENT 8.12 VC!***
27	Siddharth Suman	siddharthhuman@gmail.com	YMG Solicitation 2015	11/11/2015	ANS-8.20	Letter issued 3/6/16 & accepted
28	Evan Beese	ebeese@foreignpolicyi.org	YMG Solicitation 2015	Nov-15	ANS-15.1	Letter issued 3/8/16 & accepted
29	Matthew Lynch	matt-lynch@live.com	YMG Solicitation 2015	15-Nov	8.1	No longer interested/active. Letter issued 3/15/16
30	Scott Finfrock	Scott.Finfrock@srs.gov	Invited by L. Wetzel to join 8.24 as Associate member; June 2015.			
31	Brandon O'Donnell	odonnell.brandon@gmail.com	Invited by J. Baker	Oct-15	ANS-8.23	Solicited by J. Baker for 8.23 & added 10/2015 ***NO LONGER ASSOC. MEMBER; UPGRADED TO VOTING MEMBER.***
32	Blaine Rice	barice@nuclearfuelservices.com	Invited by J. Baker	Oct-15	ANS-8.23	Solicited by J. Baker for 8.23 & added 10/2016
33	Bristol Hartlage	bhartlage@curtisswright.com	YMG Solicitation 2015	Nov-15	ANS-3.15	Letter issued 3/23/16 & accepted
34	Ning Zhang	ning.zhang@lanl.gov	random	2014	ANS-8.1	Added to 8.1 as assoc member 6/28/16; initially added to 8.15 in 2014 as Assoc Member **but is now full member on 8.15.**
35	Steven Thompson	steven.a.thompson@dom.com	random	6/20/16	ANS-19.10	e-letter w/placement on 19.10 sent 7-14-16
36	Amir Bahadori	bahadori@ksu.edu	random	5/27/2016	ANS-6.4.2	Accepted to 6.4.2 on 10/13/16 and notification issued same date.
37	Matthew Chapa	matt.r.chapa@gmail.com	random	10/11/2016	ANS-8.19	Accepted to ANS-8.19 on 1/13/17; letter sent 1/16/17.
38	Chelsea Gunter	Chelsea.Gunter@Shearman.com	Feb 2017 NSN Brief	2/16/2017	ANS-57.11	Accepted to ANS-57.11 on 2/21/17; message sent 2/21/17.
39	Charles Cohen	charles.cohen.72@gmail.com	NN	3/12/2017	ANS-2.18	Accepted to ANS-2.18 on 3/15/17; e-letter sent 2/16/17.
40	R. Patrick White	rpwhite@mit.edu	responded to N&D call out for volunteers for 30.3	7/21/2017	ANS-30.3	Accepted to 30.3 on 7/24/17: e-letter sent same day.
41	Kelsey Amundson	kamundson5@gmail.com	random	6/30/2017	ANS-8.20	11/3/17: Accepted to 8.19 as Assoc. Member-ps. 8/30/17: Invite sent by D. Hill & accepted by K. Amundson; followup letter sent by PAS same day. 8/22/17: Another reminder sent to J. Chapman w/Bowen on CC-ps. 8/1/17: reminder sent-ps. 6/30/17: Send VF/resume to 8.28 WGC J. Chapman for consideration - others of interest have assoc members or are not active.
42	Timothy Crook	tcrook@transatomicpower.com	random	6/8/2017	ANS-20.2	9/26/17: Accepted by D. Holcomb on ANS-20.2-ps. 9/25/17: W/Flanagan's permission, Crook's VF/resume was sent to ANS-15.22 WGC D. Cronin for consideration-ps. 9/22/17: Sent email to Flanagan w/Holcomb on copy requesting whether another WG should be considered for placement; possibly 15.22-ps. 8/22/17: reminder sent to D. Holcomb w- Flanagan on copy-ps. 8/1/17: reminder sent -ps. 6/15/17: Flanagan responded that he connected Crook w/Holcomb for 20.2. Followup email sent to Holcomb to confirm placement. 6/15/17: VF sent to Flanagan for suggestion on placement. Date on VF is 3/17/17 but not rec'd until 6/8/17.

Associate Member Log (Updated 6/3/18)

43	Vaibhav Yadav	vaibhav.yadav@inl.gov	YMG Solicitation 2017	10/4/2017	LPSD WG	10/5/17: Sloane asked SC-SD chairs to consider; Wakefield accepted V. Yadav on LPSD WG; Yadav was notified & completed ASME forms the same day-ps. 10/4/17: Docs sent to Sloane & Amico for consideration under SC-SM & SC-SD-ps. 10/3/17: rec'f VF form/resume. 8/23/17: Responded right away to YMG solicitation & was sent VF. Wanted to get management approval to participate before completing VF.
44	Cheri Paugh	paughcj@westinghouse.com	random	11/2/2017	ANS-58.2	11/7/17: Accepted to 58.2 by WGC D. Zheng & notified same date.
45	Joshua Marshall	jmmarshall@nuclearfuelservices.com	random	6/29/2016	ANS-8.1	11/13/17: Notified of acceptance. 11/9/17: Accepted to 8.1 by WGC N. Brown. NOTE: Delay in placement due to lost VF.
46	Arielle Miller	millerarielle15@gmail.com arielle.miller@dnfsb.gov	submitted new VF after attending NCS Std Forum @ 2017 Winter Meeting	11/2/2017	ANS-8.12 ANS-8.1	11/16/17: Accepted to 8.1 as associate member-ps. 11/15/17: Accepted to 8.12 as Assoc Member but will likely be upgraded to full member assuming that she is active. Initially was added to ANS-54.1 as assoc. member 4/13/11; withdrew due to job change. Was reassigned to 57.11 as associate member on 6/3/2013--currently full member of 57.11.
47	Katherine McCurry (Ste	katherine.mccurry@nrc.gov	random	8.12	8.12	12/29/17: Email sent to C. Tripp w/req to consider her on 8.12; accepted by Tripp same day. 12/20/17: rec'd VF expressing interest in 8.12; heard about our SC from C. Tripp.
48	Travis Wilson	travis.wilson@cns.doe.gov	random	9/26/17 & resubmitted 12/20/2017 by M. Crouse	ANS-8.22 ANS-8.7	2/7/18: Directed by SubC Chair D.Bowen that he also be added to ANS-8.7. 1/24/18: M. Crouse confirmed acceptance to 8.22; Wilson notified same day.
49	Quentin Newell	quentin.newell@urenco.com	random	1/23/2017	ANS-8.1 & ANS-8.12	2/7/18: SubC Chair D. Dowen directed that Q. Newell be assigned to ANS-8.1 & ANS-8.12; notified same day & added to WS
50	Konner Casanova	konner.casanova@inl.gov	random	9/21/2017	ANS-8.3 & ANS-8.23	2/7/18: SubC Chair D. Dowen directed that Q. Newell be assigned to ANS-8.1 & ANS-8.12; notified same day & added to WS
51	Austin McGee	austin.mcgee@cns.doe.gov	random	11/15/2017	ANS-8.3 & ANS-8.17	2/7/18: SubC Chair D. Dowen directed that Q. Newell be assigned to ANS-8.1 & ANS-8.12; notified same day & added to WS
52	Jennifer Lyons	jennifer.lyons@pnnl.gov	random	5/1/2018	ANS-8.19	5/1/18: ANS-8.19 WGC J. Miller confirmed placement same day. Per note on VF form: Andrew Prichard recommended joining an ANS Standards Committee.

52 associate members placed since 8/2015
45 current associate members
0 individuals waiting for placement

ATTACHMENT 17
OPEN Action Items

Standards Board OPEN Action Item Status Report for 6/19/18 Meeting

Action Item	Description	Responsibility	Status/Comments /Reassignments
2/2018-03	Steven Arndt to follow up with Steven Stamm about possible suggestions for communicating standards opportunities to local sections. DUE DATE: March 1, 2018	Steven Arndt, Steven Stamm	OPEN S. Stamm offered the following thoughts: Improving Standards Communications with Local Sections: 1) Prepare a standards presentation for Local Section Members (~30 minutes) a) Focus on potential Local Section needs (1) access (finding and obtaining standards) (2) influence (providing input, review or being WG/SC members) (3) Associate positions b) Deliver via web presentation with telecom backup c) Have at least 2 time slots so people could get to one of them d) Make this into a video that could be linked on local section websites e) Goal is to reach entire mailing list of the local sections. f) Discuss usefulness of follow-up session(s) 2) Offer Webcasts with authors of specific standards of interest to a specific section that would consist of a short summary followed by Q&A. This could be done as a dinner meeting topic. In some cases it might be possible to do this in person. 3) Offer something similar focused on student sections from key universities.
2/2018-04	Prasad Kadambi, on behalf of RP3C, to update the draft RP3C guidance document and provide to the Standards Board before the June 2018 meeting. Per Action Item 10/2017-19, consensus committee chair comments due by February 28, 2018. DUE DATE: June 1, 2018	Prasad Kadambi	OPEN Draft included with 6/19/18 meeting materials
2/2018-06	Steven Arndt and Pat Schroeder to discuss improving the process of notifying the public, utilities, and industry organizations of ANS standards development activities; possibly expanding the distribution letters to other stakeholders. DUE DATE: March 1, 2018	Steven Arndt, Pat Schroeder	OPEN

Standards Board **OPEN** Action Item Status Report for 6/19/18 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
2/2018-08	Steven Arndt to contact Ralph Hill for more information on ASME's Board on Nuclear Codes and Standards collaborative effort to revive nuclear power in the United States. DUE DATE: February 15, 2018	Steven Arndt	OPEN
10/2017-12	Consensus committee chairs to follow up with new liaisons when updated list available. DUE DATE: April 1, 2018	Consensus committee chairs	On going Updated list provided to CCCs 3/2/18. P. Schroeder has sent meeting/teleconference invites and minutes to PD liaisons. PD leadership changes after June meeting. PD liaisons will need to be reconfirmed again.
10/2017-13	Donald Eggett to contact the ANS Student Conference chair for the upcoming Student Conference next April at the University of Florida-Gainesville to explore their interest and opportunity for a standards presentation. (see http://www.ansstudentconference2018.com/contact.html) DUE DATE: February 15, 2018	Donald Eggett	Completed but follow up action needed. A local representative could not be found to attend the 2018 student conference. A new action item is needed to start preparations for a presentation at the 2019 student conference–April 4-6 at Virginia Commonwealth University.
10/2017-14	Steven Arndt to work with consensus committee chairs to establish an annual process to identify opportunities and representatives to make presentations at topical meetings, conferences, and local sections to encourage standards participation. DUE DATE: April 1, 2018	Steven Arndt & consensus committee chairs	OPEN S. Arndt explained that he is giving this consideration. S. Stamm had a few suggestions for local sections. AI 2/2018-03 was opened for Arndt & Stamm to talk offline.
10/2017-19	Consensus committee chairs to review the RP3C categorization spreadsheet of standards and projects recommended to incorporate RIPB methods and develop a path forward with priorities. Consensus committee plans (including variances from the recommendations) to be reported back to the SB and RP3C. (The list includes projects under ESCC, FWDCC, LLWRCC, NRNFCC, and RARCC.) DUE DATE: April 1, 2018	ESCC, FWDCC, LLWRCC, and RARCC chairs NA for NRNFCC as NRNFCC standards part of operating plan and working w/RP3C.	OPEN P. Kadambi recognized communications with LLWRCC & NCSCC. ESCC provided a response 3/22/18. Response needed from the following: • FWDCC • RARCC

Standards Board **OPEN** Action Item Status Report for 6/19/18 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
10/2017-20	Consensus committee chairs to review the draft RP3C guidance document and submit any comments to Prasad Kadambi and Pat Schroeder. DUE DATE: February 28, 2018	Consensus committee chairs NA for NRNFCC as chair is helping to write guidance. Responses needed from: • FWDCC • LLWRCC • SRACC	OPEN Response rec'd from JCNRM (comment provided) RARCC (no comments) NCSCC (no comments) ESCC (no comments) AI 2/2018-04 was opened for RP3C to provide the SB a revised guidance document by the June 2018 meeting. Reminder sent 3/22/18.
10/2017-21	Carl Mazzola to work with Jennifer Call (Siting: Atmospheric Subcommittee Chair) to determine the direction and need of proposed new standard ANS-3.16, "Meteorological Aspects of Wildland Fire Response." DUE DATE: April 1, 2018	Carl Mazzola	In progress A questionnaire was prepared and sent to the Nuclear Utility Meteorological Data Users Group and DOE Meteorological Coordinating Council members for feedback on the need for proposed new standard ANS-3.16, "Meteorological Aspects of Wildland Fire Response." The questionnaire and its analysis are available in Workspace here. The ESCC will discuss the evaluation and make a determination on their upcoming teleconference scheduled 3/19/18. Mazzola added that the industry is not convinced that a standard is needed.
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." DUE DATE: March 1, 2018	Gene Carpenter	OPEN G. Carpenter sent email 2/3/18 to DOE contacts following up on their review.
10/2017-27	Gene Carpenter to solicit the following for the ANS-3.15 Working Group on cybersecurity: 1) NRC representative 2) DOD representative 3) Additional leadership DUE DATE: April 1, 2018	Gene Carpenter	OPEN G. Carpenter reported that he contacted J. Nakoski for help soliciting a NRC rep. S. Arndt suggested that Carpenter contact him off line to discuss.

Standards Board **OPEN** Action Item Status Report for 6/19/18 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
10/2017-28	Steven Arndt to set up a meeting with Russ Bell and senior NEI leaders. DUE DATE: April 1, 2018	Steven Arndt	OPEN
06/2017-04	Steven Arndt to review the chair and members for all of the TGs and solicit/adjust as appropriate (scopes/member lists – Attachment 3 of 6/13/17 minutes). Specific actions discussed include the following: • Solicitation of new External Communications TG Chair • Add Amir Afzali as a member of the External Communications TG DUE DATE: April 1, 2018	Steven Arndt	OPEN The action item was reassigned to S. Arndt as the new SB chair. . New action Item assigned for P. Schroeder to provide S. Arndt a copy of the TG Scope & Member list – file provided 10/31/17 & resent 5/14/18.
06/2017-16	RP3C to issue their operating plan with inclusion of the following: • RP3C action item to categorize all ANS standards and projects (i.e., current, withdrawn, active, inactive) into one of three categories -- RIPB, PB, or not applicable. • Implementation of RIPB principles in ANS-3.14, "Process for Aging Management and Life Extension of Nonreactor Nuclear Facilities," and ANS-58.14, "Safety and Pressure Integrity Classification Criteria for Light Water Reactors." • SB decisions on ANS Executive Committee inputs DUE DATE: June 1, 2018	RP3C Prasad Kadambi, Ed Wallace	OPEN Draft plan provided to SB with 6/19/18 meeting materials. P. Kadambi confirmed that the bulleted items either were or will be incorporated into the operating plan.
06/2017-18	The Policy TG to determine how the statement on standards development drafted by Robert Busch is addressed. DUE DATE: March 1, 2018	Steven Arndt/ Policy TG	OPEN The statement and SB comments on the statement are accessible here.
11/2016-08	Prasad Kadambi to work with Steven Arndt on preparing a conformity assessment business case. DUE DATE: June 1, 2018	Prasad Kadambi	OPEN Kadambi has invited Ms. Roberta Telles to address the SB on conformity assessment and hopes that she'll be able to attend a future meeting in the DC area. New AI 2/2018-05 was opened for P. Schroeder to check with S. Levy for the name of a Finance Committee member that researched a conformity assessment program.

Standards Board **OPEN** Action Item Status Report for 6/19/18 Meeting			
Action Item	**Description**	**Responsibility**	**Status/Comments /Reassignments**
6/2016-03	Russell Bell to help coordinate ANS work on advanced reactor standards with other SDOs and industry. Due Date: On-going	NEI Liaison	On-going R. Bell confirmed that he is providing this service. He looks forward to the AR Workshop scheduled for 5/2/18.
6/2016-14	External Communications Task Group to evaluate and improve the process of notifying the public and NEI/utilities of standards development activities. Due Date: April 1, 2018	ECTG & Steven Arndt	OPEN New AI 2/2018-06 was assigned for S. Arndt & P. Schroeder to discuss expanding the distribution letters to stakeholders.
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. Due Date: June 1, 2018	Gene Carpenter	OPEN G. Carpenter confirmed that the LLWRCC has reviewed the standards ranked 11-20 and will continue to review their progress.
11/2015-21	The LLWRCC to approve a PINS for a cybersecurity standard and forward to the standards manager. DUE DATE: June 1, 2018	Gene Carpenter	OPEN Leadership is being replaced for this project.

ATTACHMENT 18
Completed Action Items

Standards Board COMPLETED Action Item Status Report for 6/19/18 Meeting

Action Item	Description	Responsibility	Status/Comments /Reassignments
2/2018-01	Steven Arndt to check with the Planning Committee to confirm that the Planning Committee Assessment Form still needs to be updated. DUE DATE: March 1, 2018	Steven Arndt	Completed ANS Exec Dir. Confirmed that the assessment form or alternate form does not need to be updated at this time.
2/2018-02	Pat Schroeder to send Donald Eggett a reminder to contact the ANS Student Conference chair for the April 2018 Student Conference at the University of Florida-Gainesville about a possible standards presentation. (Relates to Action Item 10/2017-13) DUE DATE: February 5, 2018	Pat Schroeder	Completed Reminder sent 2/5/18
2/2018-05	Pat Schroeder to contact ANS Finance Director Staci Levy for the name of the Finance Committee member that researched a conformity assessment program. DUE DATE: February 2, 2018	Pat Schroeder	Completed Finance Committee minutes were searched but no research on a conformity assessment program was found.
2/2018-07	Steven Stamm to update the SMART Matrix and issue to members. DUE DATE: March 1, 2018	Steven Stamm	Completed Issued to TG and CC chairs for review/updates 5/15//18.
2/2018-09	Russell Bell to help spread the word to NEI Advanced Reactor Technology Working Group members about the May 2, 2018, Advanced Reactors Workshop. DUE DATE: February 15, 2018	Russell Bell	Completed Numerous notices issued.
2/2018-10	Pat Schroeder to send Andrew Sowder call in details for the February 12, 2018, Advanced Reactors Workshop planning call and to include him on future planning call notices. DUE DATE: On-going up to the workshop	Pat Schroeder	Completed Call in details for 2/12/18 call sent 2/5/18
2/2018-11	Steven Arndt to ask Donald Eggett to chair the Standards Service Award Selection Committee. DUE DATE: February 15, 2018	Steven Arndt	Completed Email sent 2/6/18
2/2018-12	Donald Eggett (selection committee chair), Robert Budnitz, Charles Moseley, and Steven Stamm to serve on the selection committee to recommend a candidate for the 2018 Standards Service Award. DUE DATE: May 1, 2018	Donald Eggett, Robert Budnitz, Charles Moseley, Steven Stamm	Completed Candidate selected and to be announced to SB for confirmation at 6/19/18 meeting.
2/2018-13	Pat Schroeder to follow up with the NAYGN chair to make arrangements for Standards Board Chair Steven Arndt to lead a presentation on standards opportunities to the NAYGN membership. DUE DATE: February 15, 2018	Pat Schroeder	Completed Presentation held 3/29/18 @ noon eastern.

Standards Board COMPLETED Action Item Status Report for 6/19/18 Meeting

Action Item	Description	Responsibility	Status/Comments /Reassignments
2/2018-14	Pat Schroeder to add an item to the June 2018 Standards Board agenda for a discussion to insure that Standards Committee work on industry issues is recognized. DUE DATE: June 1, 2018	Pat Schroeder	Completed Added to agenda.
2/2018-15	Pat Schroeder to issue a web poll to capture members' availability for a one-hour teleconference in the middle of May 2018. DUE DATE: February 2, 2018	Pat Schroeder	Completed Poll issued; call held 5/14/18 @ 2:00pm eastern.
10/2017-01	Pat Schroeder to add a date to future updates of the Standards Committee Assessment Form. DUE DATE: May 1, 2018	Pat Schroeder	NA The form no longer needs to be updated.
10/2017-07	Consensus committee chairs to participate or select a representative to support the industry workshop to create a strategic vision for development of advanced reactor standards. Consensus committee chairs should provide the name of their representative to George Flanagan and Pat Schroeder. DUE DATE: March 1, 2018	Consensus committee chairs	Completed Workshop held 5/2/18
10/2017-08	Steven Arndt, Amir Afzali, Gene Carpenter, Prasad Kadambi, John Nakoski, James O'Brien, Andrew Sowder, and Pat Schroeder to assist George Flanagan in working with NRC and DOE to organize the workshop to create a strategic vision for development of advanced reactor standards. DUE DATE: Ongoing until 5/2/18 workshop	George Flanagan Steven Arndt Amir Afzali Gene Carpenter Prasad Kadambi John Nakoski James O'Brien Andrew Sowder Pat Schroeder	Completed Workshop held 5/2/18.
10/2017-09	Robert Budnitz, Prasad Kadambi, and Larry Wetzel to send William Turkowski and Pat Schroeder updates to the PD Liaison List. DUE DATE: March 1, 2018	Robert Budnitz Prasad Kadambi Larry Wetzel	Completed Liaison list updated.
10/2017-10	Steven Arndt to talk with PD Committee Chair Hans Gouger to insure appointments of PD liaisons are provided to William Turkowski and Pat Schroeder to update the list. DUE DATE: March 1, 2018	Steven Arndt	Completed Request sent 1/29/18 to PD chairs; list updated.
10/2017-11	William Turkowski and Pat Schroeder to update the PD/SC Liaisons List and distribute to consensus committee chairs. DUE DATE: March 15, 2018	William Turkowski Pat Schroeder	Completed Updated and sent to CC chairs 3/22/18.

Risk-Informed Performance-Based Principles and Policy Committee Operating Plan
DRAFT 5-2018

1. Introduction

In 2013, the American Nuclear Society's (ANS) Standards Board (SB) established a Risk-Informed and Performance-Based Principles and Policy Committee (RP3C) responsible for developing approaches, priorities, responsibilities and schedules for implementation of risk informed and performance based (RIPB) principles in ANS standards.

This operating plan describes the RP3C goals and activities/processes that RP3C will perform/utilize to meet its responsibilities consistent with the RP3C bylaws.

2. RPC3 Activities/Processes

2.1 Development of RIPB Guide for ANS Committees and Working Groups

The RP3C will develop a guidance document on concepts/methods that can be used to make ANS standards more risk-informed and/or performance-based during revision or initial development. This guide will discuss the integration of existing requirements with risk informed and performance based requirements.

The guidance document will be based on first developing an understanding of the nature and scope of ANS standards and projects (current, withdrawn, active, inactive). Available data on the ANS standards and projects will be categorized into one of three categories – RIPB, PB, and not applicable. The categorized list will be shared with the Consensus Committees in the ANS Standards Committee and assignments will be made for CCs to review and discuss with RP3C.

In parallel with the categorization, implementation of RIPB principles will be pursued with Working Groups for several ongoing standards activities. The content of the RP3C guidance document will be informed by the experience with implementation of RIPB principles relative to these standards activities.

2.1.1 Categorization of ANS Standards and Projects

The categorization activity will be performed by the team of Ed Wallace, Alan Levin, and Jim August. The data available in the following link will be used:

https://workspace.ans.org/higherlogic/ws/groups/scg/documents

Schedule (TBD):

- 1st draft sent to RP3C committee
- Comments included and 2nd draft sent to RP3C
- 3rd draft sent to CCs and Standards Board

Responsibilities:

- Lead Ed Wallace

2.1.2 Develop RIPB guidance document for CCs

The guidance document on concepts/methods that can be used to make ANS standards more risk-inform and/or performance-based during revision or initial development will be prepared using

generally accepted principles and policies as documented for practices being currently proposed or implemented successfully as recommendations for ANS Standards. This guide will discuss the integration of existing requirements with risk informed and performance based requirements.

Schedule (TBD):
- 1st draft sent to RP3C committee
- Comments included and 2nd draft sent to RP3C
- 3rd draft sent to CCs and Standards Board

Responsibilities:
- Lead Prasad Kadambi

2.1.3 Pilot Implementation of RIPB Principles in specific standards activities

The pilot implementation of RIPB principles in these standards activities will be pursued in cooperation with the WG Chairs by Prasad Kadambi, Jim O'Brien and Ed Wallace.

Schedule (TBD):
- Develop Action Plan for pilot implementation for each standard
- 1st draft of implementation experience report to RP3C
- Update Guidance Document for CCs as applicable

Responsibilities:
- Lead Prasad Kadambi

2.2 Indoctrination of Standards WGs in RIPB

The RP3C will set up webinar to brief the WGs on RIPB guide, outline advantages of inclusion RIPB in standards, and how the RP3C will operate to support WGs in developing more RIPB standards.

Schedule (TBD):
- Draft of training package provided to Standard Board
- Trail run of training provided to RP3C and Standard Board
- Amended presentation based on RP3C and SB feedback
- Begin Webinar presentations to CCs and WGs

Responsibilities:
- Lead Ed Wallace

2.3 RP3C support and review of ANS standards

The RP3C will develop a process for RP3C support and review of ANS standards including review of PINS, early interface with WG to identify areas and approaches that can be used in the standard, support of WG during draft standard development, review of draft standard prior to being sent for CC balloting.

Schedule (TBD):
- Draft of process document provided to Standard Board
- Comments included and 2nd draft sent to RP3C
- 3rd draft sent to Standards Board for balloting

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

Schedule (TBD):

- Develop activities and schedules in consultation with CCs

Responsibilities:
- Lead Jim O'Brien

Identify and define any new standards that are related to risk-informed and performance-based principles that are not assigned to other standards working groups and work with the SB and CCs to identify an appropriate WG lead (and CC) for the standards development.

2.4 Interface with standards organization, industry groups and regulators

Interface with industry groups and organizations, as requested by the SB, for discussions related to achieving better coordinated risk-informed and performance-based principles and topical activities.

Specifically will interact with the JCNRM, NEI, INPO, NRC, and DOE to get their perspectives on how ANS standards could be developed or revised that make them more RIPB and better support industry and regulator objectives to support safe and efficient nuclear facility designs and operations as related to standards.

It is expected that the work of RP3C will consider and promote a wide range of outcome-oriented probabilistic applications in helping ANS standards activities become more risk-informed and performance-based. A key area where a huge amount of literature exists waiting for application is decision theory and methods for decision-making under uncertainty. The RP3C will focus on developing a paper on how probabilistic/decisionmaking applications may be utilized to support for desired safety outcomes in the use of ANS standards Clearly defining safety outcomes, together with performance assessment and monitoring, are essential elements of a performance-based approach.

Schedule (TBD):
- Perform initial set of discussions

Responsibilities:
(Multiple, e.g.)
- Amir Afzali, Advanced Reactor Regulatory Task Force
- Ed Wallace, various
- Bill Reckley, NRC
- Jim O'Brien, DOE

2.5 Self-Assessment for Effectiveness

Effectiveness is defined as the degree of congruence between expectations regarding targeted improvements and the observed outcomes.

Schedule:
-

Responsibilities:
-

Additional activities to be included on an ad hoc basis:
1. Interface with JCNRM – SCORA to coordinate risk application development and avoid duplication of efforts
2. Identify potential funding opportunities to advance ANS standards development and use. With the approval of the SB Chair pursue those not assigned to a Consensus Committee or other SB committee.

Procedural Guidance for Incorporating Risk-Informed and Performance-Based Approaches in ANS Standards (for Discussion at 6/18/18 RP3C Meeting)

ATTACHMENT 20

Consensus of Standards Board Required Prior to Implementation

1. PURPOSE

The purpose of this procedure is to outline a process that can be used by developers of standards to incorporate risk informed and performance based approaches.

2. BACKGROUND

Risk Informed Performance Based (RIPB) principles enable economical implementation of a graded approach to safety so that resources and higher quality expectations are associated with the most important activities contributing to the desired outcome. At the same time, safety implementation would avoid resource expenditures that do not provide benefits through reduced risk.

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.” [see SRM-SECY-98-0144].

Additionally, the NRC has also provided a definition for a “Performance-based Approach” as follows: ““"Performance-Based Approach": A regulation can be either prescriptive or performance-based. A prescriptive requirement specifies particular features, actions, or programmatic elements to be included in the design or process, as the means for achieving a desired objective. A performance-based requirement relies upon measurable (or calculable) outcomes (i.e., performance results) to be met, but provides more flexibility to the licensee as to the means of meeting those outcomes. A performance-based regulatory approach is one that establishes performance and results as the primary basis for regulatory 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.”

NFPA 805 is an example of a standard that was endorsed by the NRC and labelled as performance-based. It was prepared by the NFPA Technical Committee on Fire Protection for Nuclear Facilities. Issued by the Standards Council on January 13, 2001, it was approved as an American National Standard on February 9, 2001. NFPA 805 describes a methodology for establishing fundamental fire protection program.

The NRC evaluated NFPA 805 and determined that, in general, it is consistent with the principles for performance-based regulation. It provides for the establishment of a minimum set of fire protection requirements but allows performance based or deterministic approaches to be used to meet performance criteria. Under NFPA 805, a licensee adopts the performance goals, objectives, and criteria itemized in Chapter 1 of NFPA 805 and then meets those goals, objectives, and criteria through the implementation of performance-based or deterministic approaches.

The NFPA 805 methodology incorporates the following attributes: (1) measurable or calculable parameters exist to monitor the system, including facility performance; (2) objective criteria to assess performance; and (3) flexibility to determine how to meet established performance criteria in ways that will encourage and reward improved outcomes.

NFPA-805 was examined for the purpose of finding elements that could be used directly in ANS standards. It was determined that NFPA-805 would not be a suitable example to base procedural guidance for ANS CCs.

3. PROCEDURE

3.1 Determining whether standard can utilize performance based principles

All standards prescribe to certain extents what (the outcome) is to be obtained from using the standard and to different level, how to obtain the outcome.

Depending upon the outcome to be achieved there may be only one way to achieve it. For example, in determining decay heat load, it is necessary to specify a heat generation rate. This would be a prescriptive requirement for design. For other outcomes, there may be more than one way to obtain the outcome. In these cases the standard should still identify the process for achieving the outcome but the process can include flexibility in how the outcome is achieved. The degree of flexibility equates to the amount of performance based.

This is discussed further below.

3.1.1 Define ultimate outcome of the Standard

Clear understanding (and statement) of the ultimate outcome of the standard is a critical step in any standard development. It will also be necessary in determining whether the standard is candidate for being performance based.

3.1.2 Define the approach (major steps) to obtaining the outcome

In order for a standard to be a “standard” it must define and require the use of the approach for achieving an outcome. The goal of a standard is to define the approach such that there is a high level of confidence that the outcome will be achieved.

3.1.3 Determine whether there are alternative approaches for achieving the outcome.

For some situations there will only be one approach that will result in achieving the outcome (e.g., calculation of decay heat load). In that case the standard is not suitable to be made “performance based.”

In other situations, there may be different means to establish the outcome (for example achieving an appropriate fire protection program or radiation protection program). In this situation the standard development working group should determine the level of specificity in the definition of the process for achieving the outcome (or sub outcomes) is necessary.

3.2 Determine whether the standard can utilize risk informed approach to allow for more efficient achieving of outcomes

The following are ways to utilize risk informed approaches in standards development:

- Make the ultimate outcome is risk based (e.g., consequence at a given frequency): An example of this is seismic standards.

- Specify the use of probabilistic or statistical methods for achieving the outcome: An example of this is a standard that uses collection of an expert based data (or other data) such as the seismic hazards process
- Allow different approaches to be made to achieve outcomes but specify the approach used be justified to provide an appropriate level of confidence on the accuracy or repeatability of achieving the outcome. An example of this is where the margin of safety provided (or amount of conservatism) is based the confidence (or uncertainty) associated with the data or the process used in achieving the outcome.
- Allow risk insights to provide the basis for decision-making regarding parameters that dictate the scope of a program (radiation protection program) and/or areas the program will focus on.

If the standard can be developed (or updated) using any of these approaches; then it may be a good candidate for risk informing.

3.3 Determining whether to apply performance based, risk informed, or performance based/risk informed approach for the standard.

The reason to apply a performance based, risk based, or a performance based/risk informed approach in a standard is that it will result in an outcome that is more useful to the standard user(s). This means that if provides better assurance of safety and/or better utilization of resources to achieve the appropriate level of safety.

ATTACHMENT 21

RP3C Report to Standards Board

Philadelphia, PA
June 19, 2018

Significant Themes Covered of Interest to the Standards Board

- RP3C Learned Lessons from Specific ANS Standards
  - Steps taken beyond categorization reported earlier
- RP3C's Use of SMART Matrix
  - Matrix contains all necessary PB elements (Attachment to this presentation)
  - RP3C helps WGs construct and use SMART Matrix concept
- RP3C Operating Plan (Attachment 18 from SB Meeting Agenda Package)
- Procedural Guidance Development (Attachment 19 from SB Meeting Agenda Package)
- Changing Environment
  - Back to the Future
- Continue Interactions on Projects

Regulatory Trends
Focus Standards on Outcomes

- NRC expectations on outcomes of reviews will be PB
  - Standards can help by making industry submittals PB
- Key NRC documents have relevance to standards
  - LMP work leading to RG
  - Functional Containment paper
  - Transformation paper
- Standards that reflect RIPB practices will support AR and align with NRC expectations
  - Work with LMP products
- ANS has opportunity to lead other SDOs
  - Need to follow through on activities related to Standards Forum and Workshop on AR

RP3C's SMART Matrix

RP3C Activity	Specific	Measurable	Attainable	Resources	Time
Activity 1					
Activity 2					
Activity 3					
Activity 4					
Activity 5					
Activity 6					
Activity 7					
Activity 8					

Updated RP3C Operating Plan

See Attachment 18 of SB Agenda Package

- Item 2.1 is to develop a RIPB guide for the ANS Standards Committee
  - Begins with categorization of ANS standards and projects, which was done and presented to the SB
  - Although some refinement has occurred no significant change has happened
- Item 2.1.2 is to develop guidance
  - RP3C activity between November 2017 and June 2018 has been in this area
  - Focus has been on examples
  - Wide range of examples were considered and some will be discussed at this meeting
- Further evolution of RP3C Operating Plan awaits sufficient consensus on basic elements of RIPB guidance

ESCC Chairman's Report to the ANS Standards Board

Tuesday, June 19, 2018 • Marriott Philadelphia Downtown, Philadelphia, PA

Projects in Consideration/Interest being Sought (3)

- ANS-2.13, "Evaluation of Surface-Water Supplies for Nuclear Power Sites" (reinvigoration of historical standard ANS-2.13-1979 (R1989) (W1999))
- ANS-2.19, "Guidelines for Establishing Site-Related Parameters for Site Selection and Design of an Independent Spent Fuel Storage Installation (Water Pool Type)" (reinvigoration of historical standard ANS-2.19-1981 (R1990) (W2000))
- ANS-3.16, "Meteorological Aspects of Wildland Fire Response" (proposed new standard)

PINS in Development/Approval (6)

- ANS-2.18, "Standards for Evaluating Radionuclide Transport in Surface Water for Power Sites" (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-2.32, "Guidance on the Selection and Evaluation of Remediation Methods for Subsurface Contamination" (new standard being reinvigorated by interim chair)
- ANS-2.33, "Aquatic Ecological Surveys Required for Siting, Design, and Operation of Thermal Power Plants" (new standard—formerly designated ANS-18.4)
- ANS-2.35, "Estimating the Socioeconomic Impacts of Construction, Operations, and Decommissioning a Nuclear Facility" (new standard)
- ANS-16.1, "Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure" (revision of ANSI/ANS-16.1-2003 (R2017))

Standards in Development – Approved PINS (8)

- ANS-2.9, "Evaluation of Ground Water Supply for Nuclear Facilities" (reinvigoration of historical standard ANS-2.9-1980 (R1989) (W1999))
- ANS-2.16, "Criteria for Modeling Design-Basis Accidental Releases from Nuclear Facilities" (new standard)
- ANS-2.22, "Environmental Radiological Monitoring at Nuclear Facilities" (new standard)
- ANS-2.25, "Surveys of Ecology Needed to License Nuclear Facilities" (reinvigoration of historical standard ANS-18.5-1982 (W1992); re-designated ANS-2.25)
- ANS-2.27, "Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments" (revision of ANSI/ANS-2.27-2008 (R2016))
- ANS-2.29, "Probabilistic Seismic Hazard Analysis" (revision of ANSI/ANS-2.29-2008 (R2016))
- ANS-2.34, "Probabilistic Volcanic Hazard Assessment" (new standard)
- ANS-3.8.10, "Criteria for Modeling Real-time Accidental Release Consequences at Nuclear Facilities" (new standard)

Standards at Ballot/Resolving Comments (1)

- ANS-2.8, "Determining External Flood Hazards for Nuclear Facilities" (reinvigoration of historical standard ANS-2.8-1992 (W2002)) (subsumed ANS-2.31)

Standard Recently Approved (5)

- ANSI/ANS-2.6-2018, "Guidelines for Estimating Present and Forecasting Future Population Distributions Surrounding Nuclear Facility Sites" (new standard)
- ANSI/ANS-2.10-2017, "Criteria for Retrieval, Processing, Handling, and Storage of Records from Nuclear Facility Seismic Instrumentation" (supersedes ANS-2.10-2003 (W2013))
- ANSI/ANS-2.15-2013 (R2017), "Criteria for Modeling and Calculating Atmospheric Dispersion of Routine Radiological Releases from Nuclear Facilities" (reaffirmation of ANSI/ANS-2.15-2013)
- ANSI/ANS-2.26-2004 (R2017), "Categorization of Nuclear Facility Structures, Systems, and Components for Seismic Design" (reaffirmation of ANSI/ANS-2.26-2004 (R2010))
- ANSI/ANS-16.1-2003 (R2017), "Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure" (reaffirmation of ANSI/ANS-16.1-2003 (R2008))

Standards Published (2)

- ANSI/ANS-2.6-2018, "Guidelines for Estimating Present and Forecasting Future Population Distributions Surrounding Nuclear Facility Sites" (new standard)
- ANSI/ANS-2.10-2017 "Criteria for Retrieval, Processing, Handling, and Storage of Records from Nuclear" (supersedes ANS-2.10-2003 (W2013))

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

No delinquent standards.

Responses to Inquiries (0)

No open inquiries.

Membership Changes (2)

- Jennifer Call, Oasys Inc., was elected as vice chair of the ESCC.
- Samuel Rosenbloom, U.S. Department of Energy, was approved as a member of the ESCC.

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)
Members	ANS-2.3	2017	H		a, d, e, i	2017
Chair	ANS-2.9	2017	L		a, d, e	2017
Chair/Members	ANS-2.13	pre-dates ESCC	L		a, e	various 2015-current
Members	ANS-2.18	pre-dates ESCC	M		a, d, e	various 2015-current
NA	ANS-2.22	pre-dates ESCC	H	T. Jannik accepted WGC role 10/5/17; 8 additional members recruited	a, e	various 2015-current
Members	ANS-2.25	pre-dates ESCC	M		a, d, e	various 2015-current
Members	ANS-2.32	pre-dates ESCC	M	M. Truex accepted WGC role on 11/28/17; 4 members recruited	a, d, e	various 2015-current
Chair/Members	ANS-2.33	2017	M	We have a candidate	a, d, e	2017
NA	ANS-2.34	2017	H	As of 5/2018, WG has 11 members	a, d, e	2017
Members	ANS-2.35	May 2018	M	D. Musatti accepted WGC role	a, d	May 2018
Chair/Vice Chair	Aquatic Ecology SubC	2017	M	We have a candidate that will be under-going approval	a	2017
Vice Chair	Terrestrial Ecology SubC	2014	M		a	2014
Vice Chair	General & Monitoring SubC	2014	M		a	2014

* 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

FWDCC Chairman's Report to the ANS Standards Board

Tuesday, June 19, 2018 • Marriott Philadelphia Downtown, Philadelphia, PA

PINS in Approval (1)

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

Standards in Development – Approved PINS (1)

- 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)

Standards Recently Approved (3)

- ANSI/ANS-55.1-1992 (R2017), "Solid Radioactive Waste Processing System for Light-Water-Cooled Reactor Plants" (reaffirmation of ANSI/ANS-55.1-1992 (R2009)
- ANSI/ANS-57.3-2018, "Design Requirements for New Fuel Storage Facilities at LWR Plants" (reinvigoration of historical standard)
- ANSI/ANS-57.8-1995 (R2017), "Fuel Assembly Identification" (reaffirmation of ANSI/ANS-57.8-1995 (R2011))

Standards 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

Jean Francois Lucchini was elected FWDCC Vice Chair effective 11/29/17.

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		e	various 2014 - current
Members	ANS-40.35	pre-dates FWDCC	M		e	various 2014 - current
Chair/Members	ANS-55.1	pre-dates FWDCC	M		d, e, f	various 2014 - current
Chair/Members	ANS-55.4	pre-dates FWDCC	M		d, e, f	various 2014 - current
Chair/Members	ANS-55.6	pre-dates FWDCC	M		d, e, f	various 2014 - current
Chair/Members	ANS-57.1	pre-dates FWDCC	M		e	various 2014 - current
Members	ANS-57.5	pre-dates FWDCC	M		d, e	various 2014 - current
Members	ANS-57.8	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		e	various 2014 - current
Chair/Vice Chair	High Level, GTCC, Low Level, & Mixed Waste Subcommittee	2014	M		e	various 2014 - current
Vice Chair	New and Used Fuel (Design Only) SubC	2014	M		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

JCNRM Chairman's Report to the ANS Standards Board

Tuesday, June 19, 2018 • Philadelphia Marriott Downtown, Philadelphia, PA

JCNRM Leadership

The JCNRM is managed by a chair and vice chair representing each society. Robert Budnitz and Rick Grantom serve as co-chairs for ANS and ASME respectively. Dennis Henneke and Pamela Nelson serve as co-vice chairs for ANS and ASME respectively.

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. 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 new edition is expected to be complete toward the end of calendar 2018, and to be published in early 2019.

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" is already being 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.

New Standards in Development

There are 5 new PRA methodology standards in various stages of development. NOTE: The JCNRM has decided that each of these new standards will be released initially for Trial Use and Pilot Application – not for approval as an American National Standard by the American National Standards Institute (ANSI).

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

- The writing group is led by Don Wakefield, and took a very long time to complete its first full version: the W.G. began its work in 1999.
- ANS/ASME-58.22-2014 was published on March 25, 2015, for a 36-month trial use period.
- Findings from the trial-use period are currently being incorporated into a revision of this standard, based in part on five pilot applications that were performed at operating nuclear power plants.
- 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.

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.
- ASME/ANS RA-S-1.2-2014 was published on January 5, 2015, for a 24-month trial use period.
- Findings from the trial-use period are being incorporated into a revision of the standard; the revised standard will be issued for ballot with the intent of seeking ANSI approval. This version is expected to be ready for JCNRM ballot by mid-summer 2018, with the intent of seeking ANSI approval.

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 recently from Keith Woodard, who had chaired this effort since its inception in 2005.

- The standard was published on July 13, 2017, for a 24-month trial-use period.
- The writing group is now beginning the work to revise the standard based on insights from the trial uses. It is expected that this work will continue through early 2019, 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 final JCNRM ballot was held in spring 2013, and the standard was published on December 9, 2013, for trial use and pilot application for a 36-month period.
- Multiple pilots have been completed.
- The working group is currently reviewing comments from the trial use of the standard.
- Findings from the trial-use period are being incorporated into a revision of the standard; the revised standard will be issued for ballot with the intent of seeking ANSI approval. The revision is expected to be completed and ready for JCNRM ballot by September 2018.

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. 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 related to the NRC's ALWR Interim Staff Guidance into the draft.
- A draft should be ready for ballot in mid-summer 2018 after a review by the subcommittee.
- The ALWR appendix will be issued initially for trial use and will later be incorporated into a revision of RA-S.

ANS RISC merger with ASME CNRM to form a new "Joint Committee on Nuclear Risk Management": "Organizational" aspects merged in 2012, "business" aspects in 2016

The JCNRM's activities take place under the oversight of 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 merger to create the JCNRM has two aspects, an "organizational" aspect and a "business" aspect. The "organizational" aspect, which was completed in early 2012 after over two years of administrative and liaison work, involved developing a "Rules and Operating Procedure" and a new structure for the joint committee. The structure consists of 3 subcommittees and a series of about 10 writing groups and working groups, and a half-dozen short-term project teams. This structure has worked well and there have not been any conflicts between the two societies on anything of substance.

The JCNRM "business" aspect was finalized with the signing of a licensing agreement and a copyright agreement by the managements of both societies on June 23, 2016. The arrangement consists of ANS assumption of the administrative work of editing and publishing all new JCNRM standards and the related expenses; and ASME assumption of the 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, and the related expenses. The JCNRM is obligated to follow the "Procedures for ASME Codes and Standards Development Committees." Supplemental procedures to address specifics unique to the JCNRM are in development. The ANS Standards Board has approved the procedures, and the approvals by the JCNRM and the ASME BNCS (Board on Nuclear Codes and Standards) are in process as of the time that this is being written.

Standards Inquiries and Delinquent Standards

The JCNRM does not have any delinquent standards in need of maintenance, nor any active inquiries at this time.

Future Plans

The JCNRM's Executive Committee has been meeting more-or-less bi-weekly 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, with an eye on planning for up to about two years out. The main JCNRM effort now is to develop the next version of the main PRA Combined Standard, which is planned now for ballot in late calendar 2018. This next version, which we will call a "new edition" instead of an "addendum," is expected to have substantial changes to the format as well as to the content, based largely on feedback received in the past 3-4 years as this standard has been used by the commercial nuclear-power operating fleet and by the NRC. During this period of use, many areas have been identified where inconsistencies exist between different parts of the large PRA standard, mostly due to variable interpretations, and a few other problems have also been discovered during use. A number of what the JCNRM has called "cross cutting issues" have also been identified, each of which is being worked on by one of several *ad hoc* project teams within the larger JCNRM. Some of these issues have policy implications for how the standard is to be used, but mostly these are issues with technical substance.

The other major JCNRM task in the next year is to issue the ALWR PRA standard under development as discussed in the opening section of this report. This is a major effort, involving volunteer resources.

A third important task, although it does not require a lot of JCNRM effort now, 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 approached by groups in several 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 has provided financial support for the work of the standards committee, mainly to cover travel costs of participants who have no other financial support, but also to cover a few other selected administrative and meeting expenses. The latest of these was formally awarded in February 2015 and runs through February 2020.

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LLWRCC Chairman's Report to the ANS Standards Board

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PINS in Development (5)

- ANS-3.x "Nuclear Plant Simulators for Uses Other than Training and Examination" (new standard—title TBD)
- ANS-3.15, "Cybersecurity for Nuclear Facilities" (new standard—title TBD)
- ANS-56.1, "Containment Hydrogen Control" (new standard—title TBD)
- 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" (new standard—title TBD)

PINS in Approval/Comment Resolution (1)

- ANS-59.3, "Nuclear Safety Criteria for Control Air Systems" (reinvigoration of historical standard)

Standards in Development – Approved PINS (5)

- 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-56.8, "Containment Leakage Testing Requirements" (revision of ANSI/ANS-56.8-2002 (R2016))
- ANS-58.8, "Time Response Design Criteria for Safety-Related Operator Actions" (revision of ANSI/ANS-58.8-1994 (R2017))

Standards at Ballot/Resolving Comments (3)

- ANS-3.4-2013 (R201x), "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants" (reaffirmation of ANSI/ANS-3.4-2013)
- ANS-3.5-201x, "Nuclear Power Plant Simulators for Use in Operator Training and Examination" (revision of ANSI/ANS-3.5-2009)
- ANS-51.10-201x, "Auxiliary Feedwater System for Pressurized Water Reactors" (revision of ANSI/ANS-51.10-1991 (R2008))

Standards Recently Approved (4)

- ANSI/ANS-3.2-2012 (R2017), "Managerial, Administrative, and Quality Assurance Controls for the Operational Phase of Nuclear Power Plants" (reaffirmation of ANSI/ANS-3.2-2012)
- ANSI/ANS-58.3-1992 (R2018), "Physical Protection for Nuclear Safety-Related Systems and Components" (reaffirmation of ANSI/ANS-58.3-1992 (R2008))
- ANSI/ANS-58.8-1994 (R2017), "Time Response Design Criteria for Safety-Related Operator Actions" (reaffirmation of ANSI/ANS-58.8-1994 (R2008))
- ANSI/ANS-58.14-2011 (R2017), "Safety and Pressure Integrity Classification Criteria for Light Water Reactors" (reaffirmation of ANSI/ANS-58.14-2011)

Standards Published (0)

No standards were published.

Delinquent Standards (5+ years since ANSI approval) (3)

- ANSI/ANS-3.4-2013, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants" (reaffirmation @ LLWRCC ballot)
- ANSI/ANS-3.5-2009, "Nuclear Power Plant Simulators for Use in Operator Training and Examination" (revision issued for reballot/resolving comments)

- ANSI/ANS-51.10-1991 (R2008) “Auxiliary Feedwater System for Pressurized Water Reactors” (revision resolving ballot comments & reaffirmation in process)

Responses to Inquiries in Development/Approval (4)

- An inquiry was received 8/17/17 on ANSI/ANS-3.1-1993 (W2014), “Selection, Qualification, and Training of Personnel for Nuclear Power Plants.” A response was approved and issued to the inquirer April 2018.
- An inquiry was received 11/3/17 on ANSI/ANS-56.8-2002 (R2016), “Containment System Leakage Testing Requirements.” Typographical errors were confirmed and errata issued April 2018.
- An inquiry was received 3/29/18 on ANSI/ANS-58.2-1988 (W1998), “Design Basis for Protection of Light Water Nuclear Power Plants Against the Effects of Postulated Pipe Rupture.” A response is in development.
- An inquiry was received 5/8/18 on ANSI/ANS-3.1-1993/2014, “Selection, Qualification, and Training of Personnel for Nuclear Power Plants.” --- DROPPED BY INQUIRER

Membership Changes (2)

Robert Becse, Westinghouse Electric Company, LLC, was approved as a new member to represent Westinghouse under the vendor category for existing plants. Michelle French was approved as Light Water Reactor & Reactor Auxiliary Systems Design Subcommittee 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)
Members	ANS-3.13	2014	M		d, e	various 2014-current
Chair	ANS-3.15	2018	H			
Members	ANS-51.10	2014	M		d, e, f	various 2014-current
Members	ANS-56.1	2014	M		d, e, f	various 2014-current
Chair/Members	ANS-56.2	April 2018	M		d	May 2018
Members	ANS-58.2	pre-dates LLWRCC	M		e, f	various 2014-current
Members	ANS-58.3	pre-dates LLWRCC	M		e, f	various 2014-current
Chair/Members	ANS-58.6	2014	M		e	various 2014-current
Chair/Members	ANS-58.11	pre-dates LLWRCC	M		e	various 2014-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	LWR & Reactor Auxiliary Systems Designs SubC	2017	M	Feb. 2018	d, e	2017
Vice Chair	LWR & Reactor Auxiliary Systems Designs SubC	February 2018	M		d, e	April 2018
Chair	Power Generation & Plant Support Systems SubC	2017	H		d, e	2017

* 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

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NRNFCC Chairman's Report to the ANS Standards Board

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Standards in Development – Approved PINS (2)

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

Responses to Inquiries in Development/Delinquent Standards (5+ years since ANSI approval) (0)

The committee has not received any inquiries on standards and does not have any delinquent standards.

Standards Published (0)

No standards were published.

Membership Changes (3)

Margie Kotzalas replaced Brian Smith as the NRC representative for the NRNFCC; membership approved at November 1, 2017, meeting. Charles Martin with National Security Technologies was also approved as an NRNFCC member at the November 1, 2017, meeting. Jennifer Wheeler was released from the NRNFCC due to lack of participation/non-response.

Volunteer Staffing Need

Staffing Need (Member, chair, etc.)# of positions	Standard #	Date Need Identified	Priority (H or M)*	Date Need Filled	Source**	Date-Actions Taken to Fill Need (Estimated)
NA	ANS-58.16	2016	M	Paul Rogerson offered to chair project May 2018.		e

* 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

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NCSCC Chairman's Report to the ANS Standards Board

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PINS in Development (1)

- ANS-8.22, "Nuclear Criticality Safety Based on Limiting and Controlling Moderators" (revision of ANSI/ANS-8.22-1997 (R2016))

Standards in Development – Approved PINS (7)

- 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 (R2012))
- 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 (R2015))
- ANS-8.23, "Nuclear Criticality Accident Emergency Planning and Response" (revision of ANSI/ANS-8.23-2007 (R2012))
- ANS-8.26, "Criticality Safety Engineer Training and Qualification Program"(revision of ANSI/ANS-8.26-2007 (R2012))
- ANS-8.28, "Administrative Practices for the Use of Non-Destructive Assay Measurements for Nuclear Criticality Safety" (new standard)

Standards @ Ballot/Resolving Comments (1)

- ANS-8.21, "Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors" (revision of ANSI/ANS-8.21-1995 (R2011))

Standards Recently Approved (5)

- ANSI/ANS-8.3-1997 (R2017), "Criticality Accident Alarm System" (reaffirmation of ANSI/ANS-8.3-1997 (R2012))
- ANSI/ANS-8.5-1996 (R2017), "Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material" (reaffirmation of ANSI/ANS-8.5-1996 (R2012))
- ANSI/ANS-8.6-1983 (R2017), "Safety in Conducting Subcritical Neutron-Multiplication Measurements In Situ" (reaffirmation of ANSI/ANS-8.6-1993 (R2010))
- ANSI/ANS-8.7-1998 (R2017), "Nuclear Criticality Safety in the Storage of Fissile Materials" (reaffirmation of ANSI/ANS-8.7-1998 (R2012))
- ANSI/ANS-8.24-2017, "Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations" (revision of ANSI/ANS-8.24-2007 (R2012))

Standards Published (0)

No standards were published.

Delinquent Standards – 5+ Years Since ANSI Approval (2)

- ANSI/ANS-8.21-1995 (R2011), "Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors" (revision @ NCSCC ballot/comment resolution)
- ANSI/ANS-8.23-2007 (R2012), "Nuclear Criticality Accident Emergency Planning and Response" (revision @ subcommittee ballot/comments resolution)

Responses to Inquiries in Development (1)

An inquiry was received 1/30/2018 on ANSI/ANS-8.14-2004 (R2016), "Use of Soluble Neutron Absorbers in Nuclear Facilities Outside Reactors." A response was drafted by the working group and issued to ANS-8 for approval.

Membership Changes

Kevin Kimball, Consolidated Nuclear Security, was approved as an NCSCC member.

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	ANS-8.3	2017	M		e	2017
NA	ANS-8.17	2017	M	Ellen Saylor appointed WGC 2/2018	e	2017

* 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

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RARCC Chairman's Report to the ANS Standards Board

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PINS in Approval/Comment Resolution (0)
No PINS in approval/comment resolution.

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-20.1, "Nuclear Safety Criteria and Design Process for Fluoride Salt-Cooled High-Temperature Reactor Nuclear Power Plants" (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 at Ballot/Resolving Comments (2)
- ANS-15.8-1995; R201x, "Quality Assurance Program Requirements for Research Reactors" (reaffirmation of ANSI/ANS-15.8-1995; R2013)
- ANS-54.1-201x, "Nuclear Safety Criteria and Design Process for Liquid-Sodium-Cooled Reactor Nuclear Power Plants" (revision of historical standard ANSI/ANS-54.1-1989)

Standards Recently Approved (2)
- ANSI/ANS-15.1-2007 (R2018), "The Development of Technical Specifications for Research Reactors" (reaffirmation of ANSI/ANS-15.1-2007 (R2013)
- ANSI/ANS-15.21-2012 (R2018), "Format and Content for Safety Analysis Reports for Research Reactors" (reaffirmation of ANSI/ANS-15.21-2012)

Standards Published (0)
No standards were published.

Delinquent Standards (5+ years since ANSI approval) (2)
- ANSI/ANS-1-2000 (R2012), "Conduct of Critical Experiments" (revision in progress)
- ANSI/ANS-15.8-1995 (R2013), "Quality Assurance Program Requirements for Research Reactors" (reaffirmation in progress)

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

Staffing Needs
The RARCC has no staffing needs.

Membership Changes (2)
Marya Morrison left Idaho National Laboratory (INL) and resigned from the RARCC. Sean O'Kelly, also with INL, remains on the RARCC and has taken over voting responsibilities. Edward Blandford's company affiliation changed from University of New Mexico to Kairos Power.

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SRACC Chairman's Report to the ANS Standards Board

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PINS in Development/Approval (2)

- ANS-6.1.1, "Neutron and Gamma-Ray Fluence-To-Dose Factors" (reinvigoration of historical standard ANSI/ANS-6.1.1-1991)
- 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))

Standards in Development – Approved PINS (8)

- 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-19.1, "Nuclear Data Sets for Reactor Design Calculations" (revision of ANSI/ANS-19.1-2002 (R2011))
- ANS-19.5, "Requirements for Reference Reactor Physics Measurements" (historical revision of ANSI/ANS-19.5-1995—new standard)
- ANS-19.3.4, "Determination of Thermal Energy Deposition Rates in Nuclear Reactors" (revision of ANS-19.3.4-2002 (R2017))
- ANS-19.6.1, "Reload Startup Physics Tests for Pressurized Water Reactors" (revision of ANSI/ANS-19.6.1-2016)
- ANS-19.9, "Delayed Neutron Parameters for Light Water Reactors" (new standard)
- ANS-19.12, "Nuclear Data for the Production of Radioisotope" (new standard)

Standards at Ballot/Resolving Comments (1)

- ANS-10.7-2013 (R2013), "Non-Real-Time, High-Integrity Software for the Nuclear Industry – Developer Requirements" (reaffirmation of ANSI/ANS-10.7-2013)

Standards Recently Approved (5)

- ANSI/ANS-10.5-2006 (R2017), "Accommodating User Needs in Scientific and Engineering Computer Software Development" (reaffirmation of ANSI/ANS-10.5-2006 (R2011))
- ANSI/ANS-19.3-2011 (R2017), "Determination of Steady-State Neutron Reaction-Rate Distributions and Reactivity of Nuclear Power Reactors" (reaffirmation of ANSI/ANS-19.3-2011)
- ANSI/ANS-19.3.4-2002 (R2017), "The Determination of Thermal Energy Deposition Rates in Nuclear Reactors" (reaffirmation of ANSI/ANS-19.3.4-2002 (R2008))
- ANSI/ANS-19.4-2017, "A Guide for Acquisition and Documentation of Reference Power Reactor Physics Measurements for Nuclear Analysis Verification" (historical revision of ANSI/ANS-19.4-1976 (R2000)–new standard)
- ANSI/ANS-19.11-2017, "Calculation and Measurement of the Moderator Temperature Coefficient of Reactivity for Pressurized Water Reactors" (revision of ANSI/ANS-19.11-1997 (R2011))

Standards Published (0)

No standards were published.

Delinquent Standards (5+ years since ANSI approval) (4)

- ANSI/ANS-5.4-2011, "Method for Calculating the Fractional Release of Volatile Fission Products from Oxide Fuel (maintenance requested)
- ANSI/ANS-10.2-2000 (R2009), "Portability of Scientific and Engineering Software" (SRACC concurred with working group's decision to allow the standard to be administratively withdrawn; update to be initiated when technology stable)
- ANSI/ANS-19.1-2002 (R2011), "Determination of Steady-State Neutron Reaction-Rate Distributions and Reactivity of Nuclear Power Reactors" (revision in development)
- ANSI/ANS-41.5-2012, " Verification and Validation of Radiological Data for Use in Waste Management and Environmental Remediation" (WGC position open; maintenance required)

Responses to Inquiries in Development/Approved (2)

- An inquiry was received 1/14/18 on ANSI/ANS-5.1-2005/2014, "Decay Heat Power in Light Water Reactors." The response was drafted by the working group, approved by all committees, and issued 5/10/18.
- An inquiry was received 3/11/18 on ANSI/ANS-19.6.1-2011 (R2016), "Reload Startup Physics Tests for Pressurized Water Reactors." The response was drafted by the working group, approved by all committees, and issued 6/10/18.

Membership Changes

There have been no recent membership changes.

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		e	various 2015-current
NA	ANS-10.4	2017	M	As of 5/15/18, group has 8 members	d, e	2017
Members	ANS-19.3.4	2017	M		d, e	2017
Chair/Members	ANS-19.8	pre-dates SRACC	M		e	various 2014-current
Chair/Members	ANS-19.12	pre-dates SRACC	M		d, e	various 2014-current
Chair/Members	ANS-41.5	2016	M		e	various 2015-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

ATTACHMENT 30

ANS Standards Board Task Groups
(Last Revised 11-16-16)**

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 ~~administrator~~manager.

Steven Arndt, Chair*
George Flanagan~~, Chair*~~
Prasad Kadambi
Chuck Moseley
~~Steve Stamm~~
Patricia Schroeder

NOTE: Current SB Chair = Policy TG Chair

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~~Priority Task Group~~

Comment [PS1]: Dissolved by motion at the 6/13/2017 Standards Board meeting

~~*Scope: Re-sort ANS standards data to show a priority list of ANS standards that need the most immediate attention including current, in progress, withdrawn/historical standards. Provide a short commentary on why immediate attention is needed. Communicate that list to ANS SB, consensus committees, and to the NESCC as appropriate.*~~

~~OPEN, Chair*~~
~~Jim August (Southern Nuclear Co.)~~
~~Jim Riley (NEI)~~

External Communications Task Group

Comment [PS2]: Chair appointment needed.

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 NESCC.

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

Comment [PS3]: Added by request of A. Afzail

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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)*
Jeff Brault (AGS)

Comment [PS4]: Additional members need to be appointed.

Comment [PS5]: I don't believe J. Brault has been active on this TG.

~~**Sales Task Group**~~

~~*Scope: Double or triple our standards sales in the next 2 years*~~

~~David Sachs, Chair (SB)*~~
~~Steve Stamm (SB)~~

Comment [PS6]: This task group was dissolved by motion at the 10/2017 Standards Board meeting.

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

ATTACHMENT 31

Links Between the ANS Standards Committee and Other SDOs and Other Related Organizations (updated 1/26/18)

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		N	Need assignment
AISC		N	Need assignment
AGS	Jeffery Brault (NRNFCC)	Y	
AIChE		N	Need assignment
ANSI & ISO TC 85 SC 6	Prasad Kadambi (SB)	Y	
ASCE	Carl Mazzola (SB)	Y	
ASME NQA	Chuck Moseley (LLWRCC)	Y	
ASTM-C26		N	Need assignment
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		N	Need assignment
HPS	Christopher Gramham (SRACC)	Y	
JCNRM/SCoRA	Stanley Levinson (SB)	Y	
NCRP		N	Need assignment
NEI	Russ Bell (SB)	Y	
NFPA	Bernie Till	Y	On NFPA Tech Com for Fire Protection for Nuclear Facilities
WENRA	Robert Budnitz (SB)	Y	

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
WENRA: Western European Nuclear Regulators Association