American Nuclear Society

MINUTES

STANDARDS BOARD (SB) Minutes
Grand Sierra Resort, Reno, Nevada
June 17, 2014

Members Present:
*Donald J. Spellman, *Standards Board Chair, Oak Ridge National Laboratory*
Steven L. Stamm, *Standards Board Vice Chair, Individual*
*James K. August, *Member at Large, CORE, Inc.*
Robert J. Budnitz, *JCNRM Co-Chair*, *Lawrence Berkeley National Laboratory*
Robert D. Busch, *N16 Chair, University of New Mexico*
Donald R. Eggett, *FWDCC Chair, AMES, Inc.*
N. Prasad Kadambi, *RP3C Chair*, *ISO & ANSI Liaison, Individual*
Carl A. Mazzola, *ESCC Chair, Shaw Project Group Services*
*Charles (Chuck) H. Moseley, *Member at Large, Individual*
Mathew M. Panicker, *Member at Large, U.S. Nuclear Regulatory Commission*
William Reuland, *LLWRCC Chair, Individual*
*R. David Sachs, *Member at Large, Individual*
Andrew Smetana, *SRACC Chair, Savannah River National Laboratory*
Patricia (Pat) A. Schroeder, *Standards Board Secretary, American Nuclear Society*
William M. Turkowski, *Member at Large, Westinghouse*
Edward Wallace, *Member at Large*, *NuScale Power Inc.*

**Participated by teleconference for at least a portion of the meeting.*

Members Absent:
George Flanagan, *RARCC Chair, Oak Ridge National Laboratory*
Herbert W. Massie, Member at Large, Defense Nuclear Facilities Safety Board
James O'Brien, *NRNFCC Chair, U.S. Department of Energy*
James Riley, *Liaison, Nuclear Energy Institute*
R. Michael Ruby, *Member at Large, Individual*
Tina Taylor, *EPRI Liaison, Electrical Power Research Institute*

Guests:
Michaele Brady Raap, *ANS President Elect, Pacific Northwest National Laboratory*
Gene Carpenter, *U.S. Nuclear Regulatory Commission*
Donald R. Hoffman, *ANS President, EXCEL Services Corporation*
Mark Linn, *Oak Ridge National Laboratory*
Carol Moyer, *U.S. Nuclear Regulatory Commission*

Next meeting: November 11, 2014, during the ANS winter meeting at the Disneyland Hotel in Anaheim, California

1. Welcome and introductions
In the absence of Standards Board (SB) Chair Donald Spellman, SB Vice Chair Steven Stamm called the meeting to order at 8:30 a.m. PDT and welcomed all. Introductions were made.

2. Approval of Agenda

The agenda was approved as presented.

3. Standards Service Award

Chuck Moseley (via teleconference) explained that there were several worthy candidates nominated for the Standards Service Award this year. He announced Steven Stamm as the well deserving recipient for the 2014 Standards Service Award. A citation had been prepared and was read by Carl Mazzola. Stamm was recognized for over four decades of service to the Standards Committee that included significant contributions in providing guidance by developing policy and procedures and leading a recent reorganization of the Standards Committee.

4. Issues Addressed Since Last Meeting

A. Overview of SB Topics

Steven Stamm stated that much was accomplished over the last few months and all were to be applauded. The following is a summary of projects and activities completed since the last meeting.

i) References

Stamm reiterated that references in ANS standards must be dated. Although this requirement was implied, the policy on references was recently updated to clarify this requirement.

ii) U.S. Nuclear Regulatory Commission (NRC) Participants

Stamm informed members that we were working with NRC senior management to appoint an NRC representative to all consensus committees (CCs). Members discussed endorsement of standards and that references were not endorsed along with the standard.

Mathew Panicker explained that 10 CFR 50 "Appendix K to Part 50 ECCS Evaluation Models" referenced the 1971 draft standard ANS-5.1, "Decay Energy Release Rates Following Shutdown or Uranium-Fueled Thermal Reactors," that multiplied the values for infinite operating time for the heat generation rates from radioactive decay of fission by a factor of 1.2. This draft standard was based on earlier versions of Evaluated Nuclear Data File (ENDF)-B cross section files. The latest ANS standard on decay heat is ANSI/ANS-5.1-2005 "Decay Heat Power in LWRs," which is based on the latest ENDF-B files and includes heat generation in core internal structures. Panicker requested an action item for ANS to follow-up with NRC and other interested parties to effect the rulemaking process to replace the 1971 decay heat draft standard with the current standard. As chair of the CC that is responsible for the ANS-5.1 standard, Andrew Smetana was requested to approach NRC with this request.

ACTION ITEM 6/2014-01: Andrew Smetana to start a dialog with the NRC to effect the rulemaking process to replace the reference to the 1971 draft standard on decay heat standard (ANS-5.1) in 10CFR50, Appendix K, with a reference to the most current standard. *(Note: This should include the discussion of whether the NRC prefers to use the 2005 version or the pending revision.)*
DUE DATE: 8/1/2014

iii) SB Task Group (TG) Assignments (Attachment 1)/ Liaison Members (Updated List -- Attachment 2)

Stamm explained that the recently revised TG assignments removed CC chairs from this obligation due to their heavy workload chairing a CC. Stamm took this opportunity to inform members that Donald Spellman was stepping down as SB chair. He stated that George Flanagan had been appointed the incoming SB chair effective with the close of this ANS meeting. Stamm confirmed that he would continue to serve as SB vice chair. Spellman (participating via teleconference)

confirmed that he would remain active as an observer on the SB and continue his participation on the CCs. Spellman was thanked for his service.

iv) Office of Management and Budget (OMB) Circular A-119 Comments Sent to OMB
Stamm reminded members of the response to a *Federal Register* notice recently submitted to the OMB on behalf of the SB providing comments on the proposed revision of Circular No. A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities." (Full response provided as Attachment 3.)

v) Standard Letter for Volunteer Assignment (Attachment 4)
Stamm informed members that he drafted a generic letter for use of CC chairs when appointing new CC members. The letter would need to be personalized for each new member but contains the appropriate, basic information. Pat Schroeder was asked to add the letter to the SB workspace for documents.

ACTION ITEM 6/2014-02: Pat Schroeder to add the standards generic letter for CC volunteer placement to the SB online workspace. DUE DATE: 7/1/2014

vi) Standards Pamphlet (Attachment 5)
The standards informational pamphlet was completed and distributed to the members in advance of the meeting. The pamphlet was prepared by David Sachs for international distribution in an attempt to increase standards sales. He also provided nearly 600 email addresses to send the pamphlet. Broadcasts of the pamphlet began in early June in groups of 100. Members were impressed with the content and design of the pamphlet. David Sachs (participating via teleconference) was thanked for his continued efforts to develop and see the pamphlet through to publication.

vii) Utility Engagement Program
Stamm informed members that the proposal from the SB for the utility engagement program was considered along with proposals from other committees. The initial proposal (Attachment 6) submitted was thought to be too expensive and reductions were being considered.

Presidents Special Meeting
Carl Mazzola reported on the President's Special Meeting he attended in place of Donald Spellman. Mazzola stated that the bulk of the discussions centered on the Society's upgrade of the information technology systems – the Association Management System (AMS) from Avectra. This is a relational database and will have SharePoint capabilities. Mazzola explained that customizing and implementation of the new AMS would take significant time. Initially it was expected to be completed by the end of this year, but it now looks as if it will be closer to June of 2015. Mazzola added that the new AMS will enable more efficiency. Mazzola explained that incoming President Elect Eugene Grecheck and ANS President Donald Hoffman both spoke at the meeting. Discussions also included the utility engagement program and future plans. When questioned, Mazzola confirmed that there was a brief discussion on encouraging young professionals and students in all Society activities.

B. Revision to ANS Standards Committee Policy Manual
Schroeder reported that there were four policies recently updated and one new policy added to the policy manual. The updated policy manual was available on the ANS website. The updated and new policies include the following:

- Policy on Process for Nominating, Evaluating, Selecting, and Presenting the ANS Standard Service Award (new);
- Policy on Handling References in Standards (revised);
- Policy on Developing Responses to Inquiries to About Standards Requirements,

Recommendations and Permissions (revised);
- Policy on Initiating Maintenance Procedures (revised); and
- Policy on the Implementation of Maintenance (revised).

Stamm reminded members that the new policy on maintenance required that each CC appoint an individual in charge of tracking maintenance needs for the CC.

ACTION ITEM 6/2014-03: Each CC chair to appoint a maintenance coordinator to be responsible for tracking maintenance needs of each CC. DUE DATE: 9/1/2014

It was recognized that a report of delinquent standards in need of maintenance was included in the CC chair reports provided at each ANS national meeting (annual and winter). Subcommittee chairs were recognized as supporters in this effort. Members discussed the frequency for this review. Stamm confirmed that the updated policy dictates that this review be performed annually. Spellman added that the Policy TG charter was to develop a priority list of ANS standards that need the most immediate attention.

C. Standards Committee Glossary Update
Stamm reported that he drafted an update to the glossary foreword and was waiting for updates from others expected by the end of the month to finalize the glossary. He explained that terms with multiple definitions were being reviewed to determine preferred definitions. The glossary recognizes that there were occasions that the preferred term may not be appropriate. Stamm stated that creation of a new definition should be justified. The glossary is intended as a tool for working group use.

ACTION ITEM 6/2014-04: Steven Stamm to complete the specification of preferred definitions in the glossary and issue the revised document. DUE DATE: 10/1/2014

D. Update on Standards Workspace/Training/Usage/Distribution of Industry Materials
Schroeder reported that all SB and CC[1] members had established accounts on the new workspace and were utilizing the program for all balloting and commenting. The calendar and action item features were also being used. Subcommittee ANS-8 had made a request to be added and has also been using workspace. All subcommittee chairs would be contacted shortly to confirm membership so that their site could be established. Working groups will then be added and a second training scheduled. All group levels should be added by the end of the year. Schroeder stated that Kavi had been very supportive and responsive to all requests. Stamm questioned whether comments had to be submitted to be saved and if there was a way for members to download their comments. Schroeder explained that the workspace included two types of ballots – one appropriate for administrative items and one specific for approval/commenting on draft standards. With the exception of a recent ballot issued to the Large Light Water Reactor (LLWR) CC, all ballots had been administrative so many members had not attempted to submit comments. Schroeder asked that she be allowed to take an action item to provide members appropriate guidance in submitting comments. Members expressed their sentiments that their experience so far with the new workspace was favorable. As all of the consensus committees are now included, the CC chair may use the Kavi workspace to distribute documents to their members and retain copies on the workspace.

ACTION ITEM 6/2014-05: Pat Schroeder to check on whether comments entered in our online workspace need to be submitted to be saved and if there is a way for a member to download their comments. DUE DATE: 7/1/2014

[1] The ANS/ASME Joint Committee on Nuclear Risk Management uses the ASME's web-based balloting system.

E. Sales Report/Staff Report (Schroeder) (Attachment 7)
Schroeder provided members a copy of the sales report in the meeting materials packet. She reported that sales were down but that sales often fluctuated from one period to another. Schroeder added that a 10% price increase on all standards was effective January of 2014.

5. Current Open Action Items and Issues

A. Status of Current Action Items
The list of open action items was reviewed. The status of these action items is provided at the end of these meetings. The following new action items were assigned:

ACTION ITEM 6/2014-06: Pat Schroeder to resend request to Standards Committee chairs to provide a list of projects in need of additional volunteer support for posting in LinkedIn, Nuclear Café/tweets.
DUE DATE: 7/1/2014

In discussion of Action Item 11/2012-04 to develop several grant proposals, ANS-2.8 (Flood Hazards), ANS-3.13 (Reliability Assurance Program), ANS-57.11 (Fuel Cycle Facilities), and any standards on advanced reactors were suggested as possible standards that may qualify for a grant proposal. Action Item 11/2012-04 was amended to include note of these projects/areas.

ACTION ITEM: 6/2014-07: Pat Schroeder to post Donald Eggett's Defense in Depth (DID) white paper for SB member comments with a copy to Mark Linn.
DUE DATE: 9/1/2014

ACTION ITEM 6/2014-08: Steven Stamm (with Gene Carpenter's support) to review SB comments on Donald Eggett's DID white paper and revise accordingly.
DUE DATE: 10/1/2014

ACTION ITEM 6/2014-09: Pat Schroeder to add standards header to the foreword of all future ANS standards.
DUE DATE: 9/1/2014

B. Risk-Informed and Performance-Based Principles Policy Committee (RP3C) Update and Plan Discussion
Prasad Kadambi summarized the purpose of the RP3C in promoting the modernization of risk-informed and performance-based (RIPB) methods. He reported that the committee had a broad set of responsibilities within the Standards Committee. The initial work was the development of a RIPB Plan. RP3C would provide the resource infrastructure for standards being modified or new standards being developed to use some of these modern methods. Kadambi reported that an outline of the plan was prepared and had been discussed at yesterday's RP3C meeting. He explained that safety considerations should use risk methods when appropriate. Edward Wallace added that the RP3C first needed to make sure that the RIPB Plan provided the support needed to the CCs. Robert Budnitz stated that standards needing probabilistic risk assessment (PRA) methodology would fall to the Joint Committee on Nuclear Risk Management (JCNRM). He added that the JCNRM had established a subcommittee to support other committees with PRA methods. Kadambi committed to providing a detailed outline of the RIPB Plan to the SB prior to the November SB meeting (see existing action item 11/20113-12). Budnitz added that a white paper developed by the Institute of Electrical and Electronics Engineers (IEEE) on risk-informing standards could be helpful in this effort. Schroeder was asked to distribute the white paper to the SB.

ACTION ITEM 6/2014-10: Pat Schroeder to distribute the IEEE white paper to the SB.
DUE DATE: 7/1/2014

Mathew Panicker suggested that the RP3C address PRA pitfalls as well. Kadambi added that he keeps informed of activities of the NRC and Nuclear Energy Institute (NEI) Steering Committees in this issue.

i) Need for Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Standard
William Reuland stated that he reviewed the NEI white paper on ITAAC and had spoken to NEI Liaison James Riley. Their conclusion was that it was premature to incorporate ITAAC into a standard just yet but may at some point be needed for small modular reactors (SMRs). Stamm suggested that since such as standard would be written for new designs, an action item to the Research and Advanced Reactors (RAR) CC chair to evaluate and/or develop a Project Initiation Notification Systems (PINS) form for a standard on how to prepare an ITAAC to determine if an ANS standard could be developed.

ACTION ITEM 6/2014-11: George Flanagan (current RAR chair) to evaluate and/or develop a PINS for a standard on how to prepare an ITAAC for new designs to determine if an ANS standard should be developed.
DUE DATE: 8/1/2014

ii) Beyond Design Basis Event (BDBE) and Severe Event Analysis
Spellman clarified that he questioned whether ANS standards needed to address BDBE. Budnitz confirmed that JCNRM standards have always included BDBE. Additionally, it was recognized that some of the standards under the Environmental and Siting (ES) CC did as well. Wallace explained that this issue would also be considered by the RP3C. Mark Linn added that he hasn't specifically addressed BDBE in developing ANS-50.1, "Nuclear Safety Criteria for the Design of Stationary Light Water Reactor Plants," but plans to. Budnitz confirmed that ANS-54.1 "Nuclear Safety Criteria and Design Process for Liquid-Sodium-Cooled Nuclear Power Plants," included a chapter on BDBE. Andrew Smetana was asked to consider whether BDBE should be address in standards developed by the Safety and Radiological Analyses (SRA) CC.

ACTION ITEM 6/2014-12: Andrew Smetana to consider if and how BDBE should be addressed in standards developed by SRA.
DUE DATE: 10/1/2014

A second suggestion was made for George Flanagan to develop a white paper on how to address BDBE in ANS standards.

ACTION ITEM 6/2014-13: George Flanagan (current SB Chair) to develop a white paper on how to address BDBE in ANS standards. *(Note: Steven Stamm will develop a draft for Flanagan that indicates RP3C should be included this in its plan.)*
DUE DATE: 9/1/2014

iii) DID White Paper (Eggett) (Attachment 8)
This agenda item was discussed during action items. A decision was made to issue the draft white paper for SB comment and for the comments to be incorporated into a revision by Stamm with Carpenter's help – See Action item 6/2014-07.

B. Discussion of CC Assignment of SMR Standards
Stamm reminded members that a decision had previous been made that the assignment of SMR standards would be deferred to the RAR who would have the discretion to transfer the standard to another CC if determined inappropriate for RAR.

C. Component Classification Discussion at the Nuclear Energy Standards Coordination Collaborative (NESCC) Meeting

Kadambi stated that “we” meaning ANS had been claiming responsibility for component classification. Recent standards developed on component classification have not been endorsed. Kadambi informed member that a presentation was recently made on this topic to the NESCC. The presentation was well received in terms of agreement that it should be addressed. As a result of this presentation, Spellman volunteered to establish a multi-SDO, ANS-lead work group to develop guidance on component classification and agreed to chair this task group. Additionally a grant proposal was recently prepared by ANS and submitted to the NRC to support the related ANS activities.

ACTION ITEM 6/2014-14: Donald Spellman to form a working group with representation from multiple SDOs to develop a coordination of related standards activities on component classification.
DUE DATE: 10/1/2014

D. Status of Draft Standard ANS-58.16, “Safety Classification and Design Criteria for Non-Reactor Nuclear Facilities”
Mazzola summarized the status of the ballots on draft standard ANS-58.16 that included recent recirculation and reconsideration ballots resulting in approval of 73% of the committee. According to policy, committee approval over 66% required the chair to declare consensus. Mazzola informed members that there was one maintained negative from Stamm. Stamm elaborated on his concerns. Members shared their thoughts on the following issues:

- Moving what should be requirements in standards to appendices to make them non-requirements
- Having different criteria for the same type of facility because it is built under the U.S. Department of Energy
- Use of different classification systems for different types of facilities
- Use of words such as “shall be evaluated for applicability” for specification of design codes and standards
- Referencing other standards development organization (SDO) standards for items also covered by ANS standards
- The minimum level of requirement specification acceptable in an ANS standard

Stamm suggested that additional guidance was needed on the above items and accepted an action item to prepare this guidance. Stamm would take SB member comments into consideration when preparing his guidance and would determine his direction on filing an appeal with the SB for his maintained negative on ANS-58.16 related to these issues.

ACTION ITEM 6/214-15: Steven Stamm to prepare guidance on the 6 issues discussed at the 6/17/14 SB meeting.
DUE DATE: 9/1/2014

E. U. S. Department of Energy (DOE)/NRC Joint Initiative on Design Criteria for Advanced Reactors
See Attachment 9 provided by George Flanagan in his absence.

Mark Linn addressed the SB on issues related to the development of proposed new standard ANS-50.1, “Nuclear Safety Criteria for the Design of Stationary Light Water Reactor Plants.” He informed members that a group with the DOE recently requested a teleconference with him regarding the development of ANS-50.1. They were invited to join the working group after the discussion. With no response, Linn concluded that they were not interested. Basically, it was felt that the standard was behind the curve, and it’s not clear that there are users for current reactor designs. Linn would like the path to be rethought to get ahead of the curve. The working group’s recommendation was to redirect the ANS-50.1 Working Group to prepare a general, technology-neutral design standard for incorporation of risk-informed and performance-based principles into a reactor design; the light

water reactor (LWR) focus would be removed. Linn stated that when discussed with George Flanagan, he felt that a general, technology neutral design standard using RIPB would simplify other standards. See Linn's presentation for full details available as Attachment 10.

ACTION ITEM 6/2014-16: Pat Schroeder to distribute Mark Linn's presentation regarding redirection of the ANS-50.1 Working Group to preparation of a new general reactor design criteria standard.
DUE DATE: 8/1/14

6. Consensus Committee Chair Reports

A. Balance of Interest Certification (Attachment 11)
The balance of interest reports for all CCs were approved as presented.

B. Large Light Water Reactors (LLWR) CC (Attachment 12)
LLWR Chair William Reuland referred members to his written report for the status of standards under the LLWR. He reviewed his future plans. Reuland indicated that plans included coordination with federal agencies, vendors, and other industry segments for cues to developing relevant standards for the industry. Reuland added that he was in need of a replacement for a chair for the Light Water Reactor & Reactor Auxiliary Systems Designs Subcommittee to replace Dennis Newton on his committee.

ACTION ITEM 6/2014-17: William Reuland to prepare a paragraph summarizing the position requirements for a replacement of Dennis Newton as Light Water Reactor & Reactor Auxiliary Systems Designs Subcommittee chair on LLWR and provide to Pat Schroeder to distribute to the SB for their help in soliciting a new subcommittee chair.
DUE DATE: 8/1/2014

C. Research and Advanced Reactors (RAR) CC
In RAR Chair George Flanagan's absence, members were referred to the RAR written report (Attachment 13) provided in the meeting materials packet.

D. Non-Reactor Nuclear Facilities (NRNF) CC
Members were referred to the NRNF written report (Attachment 14) provided in the meeting materials packet in the absence of NRNF Chair James O'Brien.

E. Safety and Radiological Analyses (SRA) CC
In addition to summarizing the provided written report (Attachment 15) of SRA activities, Andrew Smetana stated that he would be looking for a permanent chair for the Mathematics and Computation Subcommittee (previously ANS-10).

F. Joint Committee on Nuclear Risk Management (JCNRM) (Attachment 16)
JCNRM Co-chair Robert Budnitz reported that the joint committee was operating seamlessly. The committee's membership has been reduced to a manageable 30 members. Addendum B of the flagship standard – ANSI/ASME/ANS RA-S-2008, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," was recently issued. He estimated that there were about 100 volunteers involved in revising this standard. He reported that all utilities were using the standard and expected that all would meet the standard by the end of this year. Peer reviews have been conducted through owners groups. The standard was also being used for some NRC applications. He added that the PRA standard for non LWRs (ASME/ANS RA-S-1.4) was recently issued for trial use. Four additional standards were in development. The PRA standard on low power and shutdown (LPSD) (ANS/ASME-58.22) had been in development since 1998 and was believed to be close to achieving consensus. Both the Level 2

PRA standard (ASME/ANS RA-S-1.2) and Level 3 PRA standard (ASME/ANS RA-S-1.3) were resolving comments. The advanced light water reactor (ALWR) standard (ASME/ANS RA S-1.5) released a draft and received a comment from the NRC that they didn't need the standard because they were developing interim staff guidance (ISG). Budnitz stated that the direction of the ALWR standard was uncertain. Prasad Kadambi expressed concern that the NRC and NEI Risk Informed Steering Committees and working groups were not communicating with the standards developers. Steven Stamm asked Mathew Panicker and Carol Moyer if they could check with Michael Case, NRC Standards Executive, for feedback on why Circular No. A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities," was not being followed in the use of the ALWR PRA standard in development.

ACTION ITEM 6/2014-18: Prasad Kadambi to put together a status report on the NEI/NRC RISC committees' recommendations and provided to Pat Schroeder for distribution to the SB.
DUE DATE: 9/1/2014

ACTION ITEM 6/2014-19: Mathew Panicker to work with Carol Moyer in acquiring a response to why the NRC was not following Circular No. A-119 on the JCNRM ALWR PRA standard.
DUE DATE: 9/1/2014

Budnitz informed member that the JCNRM was recently informed that the NRC may endorse trial use standards. This was of great concern to many on the JCNRM as there could be negative consequences endorsing untried methodology that could change before the standard was finalized and received American National Standards Institute (ANSI) approval. An NRC public meeting would be held next week addressing this subject. Several JCNRM members would be in attendance.

G. Nuclear Criticality Safety (NCS) CC
NCS Chair Robert Busch provided a written report in advance with the meeting materials packet (Attachment 17). He highlighted several recent activities. A significant accomplishment was the recent approval and publication of ANSI/ANS-8.1-2014, "Nuclear Criticality Safety in Operations with Fissionable Material Outside Reactors." He added that the NCS was considering developing a glossary specific to nuclear criticality safety terminology.

H. Environmental and Siting (ES) CC
ES Chair Carl Mazzola reported that the ES had good subcommittee leadership. The first meeting was held during the ANS 2013 winter meeting. A teleconference was held last March and the next meeting would be planned during the 2014 winter meeting. Several projects considered in the 1980s had been evaluated; two had been found to have no benefit to be reinvigorated. Mazzola stated that a key standard in development was ANS-2.8, "Determine External Flood Hazards for Nuclear Facilities Determining Design Basis Flooding at Power Reactor Sites" (historical revision of ANSI/ANS-2.8-1992 – new standard). Additionally a significant update of ANSI/ANS-3.11-2005 (R2010), "Determining Meteorological Information at Nuclear Facilities," was in development. Delinquent standards were being addressed. Future plans include efforts on completing standards projects and reaffirming or revising current standards. A full report is available as Attachment 18.

I. Fuel, Waste, and Decommissioning (FWD) CC
FWD Chair Donald Eggett provided members an update on CC activities. He reported that projects were moving forward. He recognized that the committee's balance of interest could be enhanced with NRC representation. Carol Moyer confirmed that the NRC was working on appointing an NRC member to ANS consensus committees in need. A more detailed report is available as Attachment 19.

7. Other Committee Reports

A. SB TG Reports
(TG Charters & Member Lists Previously Provided – See Attachment 1)

Policy TG
Members of the Policy TG reported that there had been no activity. Steven Stamm suggested that consideration be given to reformulate/change the makeup of TG to improve activity of this group.

ACTION ITEM 6/2014-20: Donald Spellman (Policy TG Chair) to determine if the Policy TG needed to be reformulated/changed to improve the activity of this group.
DUE DATE: 8/1/2014

Sales TG
David Sachs reminded members that the sales report was discussed earlier. He added that the sales pamphlet was published and released in hopes of increasing sales.

External Communications TG
Edward Wallace reported for Herbert Massie. Wallace reported that TG members recently held a teleconference. A report is provided as Attachment 20. A result of the teleconference was a request from the TG members for an update to their charter. Wallace asked for SB members to review the requested change and to provide feedback.

ACTION ITEM 6/2014-21: Pat Schroeder to issue the proposed External Communications TG charter for comment to George Flanagan, Steven Stamm, and Donald Spellman and forward comments to the TG for resolution.
DUE DATE: 7/1/2014

Internal TG
William Turkowski informed members that the TG was recently tasked with developing five training modules. The subjects of the training modules are as follows:

- Overview of nuclear related standards, plus additional slides that address international aspects
- ANS standards organization and staffing
- The standards development process
- Standards Committee policies and procedures
- CC policies and procedures

William Turkowski explained that he was having difficulty connecting with other TG members so he took it upon himself to review past presentations and begin drafting the training modules. He believed that he could get the balance of the modules completed by the 2014 winter meeting. Robert Busch offered to help Turkowski with the training presentations. Once completed, the presentations would be issued for comment (not approval). A recommendation was made to create a student-branch presentation. Busch offered to prepare the student presentation. Budnitz suggested that it could also be used for the Student Retention Committee.

ACTION ITEM 6/2014-22: Internal Communications TG to prepare five training presentations and provide for member comments. Presentations include 1) overview of nuclear related standards, plus additional slides that address international aspects, and 2) ANS standards organization and staffing, 3) the standards development process, 4) Standards Committee policies and procedures, and 5) CC policies and procedures.
DUE DATE: 11/1/2014

ACTION ITEM 6/2014-23: Robert Busch to prepare a student presentation on ANS standards.
DUE DATE: 10/1/2014

Donald Eggett suggested that ANS professional divisions be kept informed of standards activities. The ANS professional division representative program instituted by the old Nuclear Facilities Standards Committee (NFSC) was mentioned. A suggestion was made for the Internal Communications TG to reinstitute this program.

ACTION ITEM 6/2014-24: Internal Communications TG to review the old NFSC division liaisons list and reinstitute the ANS professional division representative program. (Old NFSC professional division liaison list to be provided to the Internal Communications TG by Pat Schroeder.) DUE DATE: 9/1/2014

Priority TG:
James August reported (via teleconference) that he previously polled members for priority standards. He noted that three of the suggested priority standards were Fukushima related. Stamm added that the ANS standards priority list did not need to be the same as the NRC priority list or the NESCC priority list. August was asked to resend his list of priority standards for SB comment.

ACTION ITEM 6/2014-25: James August[2] to send his list of priority standards to Pat Schroeder for SB comment. DUE DATE: 7/1/2014

B. Liaison Reports
Liaison reports from those members who have information to report on activities from other committees, organizations.

Upon reviewing the liaison list Schroeder was asked to change JCNRM to JCNRM/Subcommittee on Risk Application (SCoRA) and to add Western Europe Nuclear Regulator Association (WENRA). (Updated list previously provided as Attachment 2.)

ACTION ITEM 6/2013-26: Pat Schroeder to change JCNRM to JCNRM/SCoRA and add WENRA on the liaison list. DUE DATE: 7/1/2014

WENRA Report
Robert Budnitz reported that he has had two recent inquiries and had furnished an answer.

International Organization of Standardization (ISO)
Carl Mazzola provided a report for ISO Technical Committee 85/Subcommittee 6, Reactor Technology, of which he serves as convener for one of their working groups. He stated that several projects had been proposed and a few had been registered as active projects. Those not registered did not meet the minimum criteria of approval of five participating members and at least five members nominating an expert for the proposed project. A discussion ensued on the possibility of sharing revenue with ISO for ISO standards based on ANS standards. Schroeder explained that she was aware of an arrangement that ISO had with ASTM International for shared revenue. These ASTM International standards were developed with multiple international members specifically for international use and did not require any changes to be approved. Schroeder speculated that ANS standards would need at least minimal modifications to meet international needs.

8. Other business

[2] Priority TG Chair position reassigned to Donald Spellman shortly after 6/17/14 SB meeting. Priority list to be updated by Spellman by 10/1/14.

A. Schedule to Align Future SB/RP3C/CC Meetings

Members reviewed options for restructuring the standards meeting schedule. Members considered moving the SB meeting to Wednesday allowing CCs to meet on Monday and Tuesday prior to the SB meeting. After a discussion, members decided to keep the SB meeting on Tuesday of both the ANS annual and winter meetings. It was the sentiment of the committee that CC meetings should not overlap the RP3C meeting. An exception was granted for the NCS meeting to partially overlap the RP3C meeting with the recognition that many members had commitments to technical sessions at other times. NCS Chair Robert Busch acknowledged that scheduling the NCS meeting in parallel with the RP3C would present a conflict with ANS staff support, but it was more important to keep the NCS meeting scheduled time. Pat Schroder was directed to schedule the RP3C and CC meetings as follows:

SRA on Sunday from 3:00 a.m. – 5:00 p.m. (winter meeting)
LLWR on Monday from 7:30 a.m. to 2:30 p.m. (annual & winter meeting)
NCS on Monday from 1:00 p.m. to 4:00 p.m. (winter meeting)
RP3C on Monday from 2:30 p.m. to 6:00 p.m. (annual & winter meeting)
FWD on Monday from 12:30 p.m. to 2:30 p.m. (winter meeting)
ES on Wednesday from 8:00 a.m. to 12:00 p.m. (winter meeting)
NRNF on Wednesday from 8:00 a.m. to 10:00 a.m. (annual & winter meeting)
RAR on Monday from 9:00 a.m. to 11:00 a.m. (winter meeting) – tentative time to be confirmed

ACTION ITEM 6/2014-27: Pat Schroeder to check with George Flanagan about the possibility of moving the RAR to Monday morning of the ANS winter (November) meetings.
DUE DATE: 9/1/2014

B. Review of action items from this meeting

SB Secretary Pat Schroeder reviewed the action items assigned during the meeting. Action items are listed following the minutes.

C. Open discussion

ANS President Elect Michaele Brady Raap addressed the SB. She wanted members to know how important standards were to the Society. Brady Raap informed members that she herself had been involved in standards for a long time, mostly in the reactor physics area, and knows firsthand how much time was devoted to standards. She stated that she was working to get better utility participation in standards and would work through Prasad Kadambi on the Utility Integration Committee. Brady Raap informed members that Barry Allen had taken over for Eugene Grecheck as the Utility Integration Committee Chair. She added that she was glad the Society was able to provide the Standards Committee with the online workspace.

ANS President Donald Hoffman also addressed the SB. He explained that he was working with NRC management to make sure that they think of ANS first for nuclear issues.

Hoffman read an email that Donald Spellman sent him about the Society's business model and his (Spellman's) suggestion to broaden the ANS business model to be an international organization. Hoffman encouraged Spellman to develop a business case to incorporate his suggestion. When questioned about becoming ANS International, similar to ASME International or ASTM International, Hoffman stated that he didn't see it but would delegate this to the incoming leadership. Brady Raap suggested that the idea of ANS International be discussed with the International Committee. [An action item was not assigned for Donald Spellman to develop a business case for broadening the ANS business model to an international organization as this suggestion was not specific to standards.]

ACTION ITEM 6/2014-28: George Flanagan (current SB Chair) to follow up with Donald Hoffman in September (2014) about interactions with Tom Boyce (NRC) to make sure that the NRC thinks of ANS first for nuclear issues and interface improvements to accomplish this.
DUE DATE: 9/30/2014

D. Next meeting
The next SB meeting will be scheduled on Tuesday, November 11, 2014, during the ANS winter meeting at the Disneyland Hotel in Anaheim, California.

9. Adjourn
The meeting was adjourned.

Status of Action Items

*****Action items are formally closed at a meeting with agreement of the members. *****

Action Item	Description	Responsibility	Status/Comments /Reassignments
6/2014-01	Andrew Smetana to start a dialog with the NRC to effect the rulemaking process to replace the reference to the 1971 decay heat standard (ANS-5.1) in 10CFR50, Appendix K, with a reference to the most current standard. *(Note: This should include the discussion of whether the NRC prefers to use the 2005 version or the pending revision.)* DUE DATE: 8/1/2014	Andrew Smetana	OPEN
6/2014-02	Pat Schroeder to add standards generic letter for volunteer placement to the SB online workspace. DUE DATE: 7/1/2014	Pat Schroeder	OPEN
6/2014-03	Each consensus committee (CC) chair to appoint a maintenance coordinator to be responsible for tracking maintenance needs of each CC. DUE DATE: 9/1/2014	CC Chairs	OPEN
6/2014-04	Steven Stamm to complete the specification of preferred definitions in the glossary and issue the revised document. DUE DATE: 10/1/2014	Steven Stamm	OPEN
6/2014-05	Pat Schroeder to check on whether comments entered in our online workspace need to be submitted to be saved and if there is a way for a member to download their comments. DUE DATE: 7/1/2014	Pat Schroeder	OPEN
6/2014-06	Pat Schroeder to resend request to Standards Committee chairs to provide a list of projects in need of additional volunteer support for posting in LinkedIn, Nuclear Café/tweets. DUE DATE: 7/1/2014	Pat Schroeder	OPEN
6/2014-07	Pat Schroeder to post Donald Eggett's DID white paper for SB member comments with a copy to Mark Linn. DUE DATE: 9/1/2014	Pat Schroeder	OPEN
6/2014-08	Steven Stamm (with Gene Carpenter's support) to review SB comments on Donald Eggett's DID white paper and revise accordingly. DUE DATE: 10/1/2014	Steven Stamm	OPEN
6/2014-09	Pat Schroeder to add standards header to the foreword of all future ANS standards. DUE DATE: 9/1/2014	Pat Schroeder	OPEN

6/2014-10	Pat Schroeder to distribute the IEEE white paper to the SB. DUE DATE: 7/1/2014	Pat Schroeder	OPEN
6/2014-11	George Flanagan (current RAR chair) to evaluate and/or develop a PINS for a standard on how to prepare an ITAAC to determine if an ANS standard should be developed. DUE DATE: 8/1/2014	George Flanagan	OPEN
6/2014-12	Andrew Smetana to consider if and how BDBE should be addressed in standards developed by SRA. DUE DATE: 10/1/2014	Andrew Smetana	OPEN
6/2014-13	George Flanagan (current SB Chair) to develop a white paper on how to address BDBE in ANS standards. (Steven Stamm will develop a draft for Flanagan that indicates RP3C should be included this in its plan.) DUE DATE: 9/1/2014	George Flanagan	OPEN
6/2014-14	Donald Spellman to form a working group with representation from multiple SDOs to develop a coordination of related standards activities on component classification. DUE DATE: 10/1/2014	Donald Spellman	OPEN
6/2014-15	Steven Stamm to prepare guidance on what goes into a standard and what goes into an appendix. Guidance may consider the 6 points discussed at the 6/17/14 SB meeting. DUE DATE: 9/1/2014	Steven Stamm	OPEN
6/2014-16	Pat Schroeder to distribute Mark Linn's presentation regarding redirection of the ANS-50.1 Working Group to preparation of a new general reactor design criteria standard. DUE DATE: 8/1/14	Pat Schroeder	OPEN
6/2014-17	William Reuland to prepare a paragraph summarizing the position requirements for a replacement of Dennis Newton as Light Water Reactor & Reactor Auxiliary Systems Designs Subcommittee chair on LLWR and provide to Pat Schroeder to distribute to the SB for their help in soliciting a new subcommittee chair. DUE DATE: 8/1/2014	Pat Schroeder	OPEN
6/2014-18	Prasad Kadambi to put together a status report on the NEI/NRC RISC committees' recommendations and provided to Pat Schroeder for distribution to the SB. DUE DATE: 9/1/2014	Prasad Kadambi	OPEN
6/2014-19	Mathew Panicker to work with Carol Moyer in acquiring a response to why the NRC was not following Circular No. A-119 on the JCNRM Advanced Light Water Reactor	Mathew Panicker	OPEN

	PRA standard. DUE DATE: 9/1/2014		
6/2014-20	Donald Spellman (Policy TG Chair) to determine if the Policy TG needed to be reformulated/changed to improve the activity of this group. DUE DATE: 8/1/2014	Donald Spellman	OPEN
6/2014-21	Pat Schroeder to issue the proposed External Communications Task Group charter for comment to George Flanagan, Steven Stamm, and Donald Spellman and forward comments to the TG for resolution. DUE DATE: 7/1/2014	Pat Schroeder	OPEN
6/2014-22	Internal Communications TG to prepare 5 training presentations and provide for member comments. Presentations include 1) overview of nuclear related standards, plus additional slides that address international aspects, and 2) ANS standards organization and staffing, 3) the standards development process, 4) Standards Committee policies and procedures, and 5) CC policies and procedures DUE DATE: 11/1/2014	Internal Communications TG	OPEN
6/2014-23	Robert Busch to prepare a student presentation on ANS standards. DUE DATE: 10/1/2014	Robert Busch	OPEN
6/2014-24	Internal Communications TG to review the old NFSC division liaisons list and reinstitute the ANS professional division representative program. (Old NFSC professional division liaison list to be provided to ICTG by Pat Schroeder.) DUE DATE: 9/1/2014	International Communications TG	OPEN
6/2014-25	James August to send his list of priority standards to Pat Schroeder for SB comment. DUE DATE: 7/1/2014	James August	OPEN
6/2014-26	Pat Schroeder to change JCNRM to JCNRM/SCoRA and add WENRA on the liaison list. DUE DATE: 7/1/2014DUE DATE: 7/1/2014	Pat Schroeder	OPEN
6/2014-27	Pat Schroeder to check with George Flanagan about the possibility of moving the RAR to Monday morning of the ANS winter (November) meetings. DUE DATE: 9/1/2014	Pat Schroeder	OPEN
6/2014-28	George Flanagan (current SB Chair) to follow up with Donald Hoffman in September (2014) about interactions with Tom Boyce (NRC) to make sure that the NRC thinks of ANS first for nuclear issues and interface	George Flanagan	OPEN

	improvements to accomplish this. DUE DATE: 9/30/2014		
11/13-01	Donald Spellman to prepare a letter to NEI capturing points from the ANS/NEI MOU and send to the SB for review. DUE: March 31, 2014	Donald Spellman	CLOSED
11/13-02	Donald Spellman to review revised standards pamphlet for international distribution and give ANS staff direction to have edited and professionally designed. DUE: January 31, 2014	Donald Spellman	CLOSED
11/13-03	Schroeder to use the ANS LinkedIn Group to disseminate standards volunteer position openings to a wide range of ANS members. DUE: As needed.	Pat Schroeder	OPEN (on-going)
11/13-04	Pat Schroeder to issue the proposed membership change to the ANS "Rule" for a two-week formal ballot. (Proposed change to include SB Special Committee Chairs as ex officio members of the SB if appropriate.) DUE: January 31, 2014	Pat Schroeder	CLOSED
11/13-05	Steven Stamm to review draft CC scopes against the Standards Committee scope to insure that all areas are covered. DUE: January 31, 2014	Steven Stamm	CLOSED
11/13-06	Pat Schroeder to issue the scopes for SB approval via ballot after Steven Stamm's review of the ANS Standards Committee scope. DUE: January 31, 2014	Pat Schroeder	CLOSED
11/13-07	Donald Spellman to provide Carol Moyer the priority list of proposed new standards. DUE: December 31, 2013	Donald Spellman	CLOSED
11/13-08	Robert Budnitz to report back to the SB on how the JCNRM approached the decision on whether to separate or combine risk application to SMRs with or separate from large LWRs. DUE: November 30, 2013	Robert Budnitz	CLOSED
11/13-09	William Reuland to send Pat Schroeder the EPRI "PSA Application Guide" for distribution to the SB for their information. DUE: November 30, 2013	William Reuland, Pat Schroeder	CLOSED
11/13-10	Pat Schroeder to find the recent Federal Register Notice from the National Archives and Records Administration on Incorporation by Reference and provide to Donald Spellman and Steven Stamm for review and potential comment submittal. DUE: November 30, 2013	Donald Spellman Steven Stamm Pat Schroeder	CLOSED
11/13-11	"Standards Committee Procedures Manual for Consensus Committees" to be revised	Pat Schroeder	CLOSED

	as requested and distributed via ballot for approval. DUE: November 30, 2013		
11/13-12	The RP3C to complete the Risk-Informed and Performance-Based Plan and circulate to the SB in advance of the November 2014 (was June 2014) meeting for approval at the meeting. DUE: November 1, 2014	Prasad Kadambi	OPEN
11/13-13	Steven Stamm to update the foreword of the glossary to include its intent/purpose to help working groups. DUE: March 31, 2014	Steven Stamm	CLOSED
11/13-14	George Flanagan to solicit additional vendor participation for the RAR. DUE: November 1, 2014	George Flanagan	OPEN
11/13-15	James O'Brien to solicit additional membership from industry to the NRNF. DUE: November 1, 2014	James O'Brien	OPEN
11/13-16	Andrew Smetana to solicit additional membership from industry on the SRA. DUE: November 1, 2014	Andrew Smetana	OPEN
11/13-17	Donald Eggett to solicit additional membership from government on the FWD. DUE: November 1, 2014	Donald Eggett	OPEN
11/13-18	All CC chairs to provide Donald Spellman a list of priority standards to be revised and or developed within their CC. DUE: December 31, 2014	ANS CC Chairs	OPEN
11/13-19	William Reuland to inform his committee of RP3C and request consideration of using RIPB in their standards with an explanation if a decision is made not to use RIPB. DUE: April 30, 2014	William Reuland	CLOSED
11/13-20	Donald Eggett to inform FWD about RP3C and to review any new PINS developed and consider if RIPB insights should be incorporated. DUE: November 1, 2014	Donald Eggett	OPEN
11/13-21	Donald Spellman and Chuck Moseley to solicit a new NRMCC co-chair to represent the ANS. DUE: December 31, 2013	Donald Spellman, Chuck Moseley	CLOSED
11/13-22	Chuck Moseley to serve as chair of the 2014 Standards Service Award Ad hoc Committee with Robert Budnitz and Carl Mazzola as members. Award Nomination DUE: May 1, 2014	Chuck Moseley, Robert Budnitz Carl Mazzola	CLOSED
11/13-23	Chuck Moseley to develop procedures for the solicitation and selection of candidates for the Standards Service Award. DUE: January 1, 2014	Chuck Moseley	CLOSED
11/13-24	Donald Spellman to contact Craig Welling for the possibility of submitting ANS	Donald Spellman	CLOSED

	comments on the NRC General Design Criteria (GDC). DUE: April 30, 2014		
11/13-25	Donald Spellman to provide Donald Hoffman a list of consensus committees (and/or areas) that could benefit from more utility participation within two weeks. DUE: July 31, 2014	Donald Spellman	OPEN
11/12-03	Robert Budnitz to temporarily serve as the WENRA liaison.	Robert Budnitz	CLOSED
11/12-04	Donald Spellman to begin development of one or more grants for ANS support. Projects to be considered for a grant proposal include ANS-2.8 (Flood Hazards), ANS-3.13 (Reliability Assurance Program), ANS-57.11 (Fuel Cycle Facilities), and advanced reactors. Due: On Hold	Donald Spellman	On Hold (grant proposals not currently being accepted)
11/12-09	Donald Eggett to provide the SB the DID white paper when available. *(Draft white paper to be provided to Gene Carpenter and Steven Stamm for review before distribution to the SB.)*	William Reuland, Donald Eggett	CLOSED
11/12-17	Prasad Kadambi to prepare a business case for initiating an ANS conformity assessment program. Due: November 1, 2014	Prasad Kadambi	OPEN
6/12-04	Donald Spellman to review the “Toolkit” for potential improvements as suggested by David Sachs. Due: January 1, 2015	Donald Spellman	OPEN

Attachment 1

ANS Standards Board Task Groups
(Revision 13 February 2014)**

Policy – improve the link between the SB and the rest of the management structure of ANS. Provide recommendations to the Standards Board to identify and resolve Consensus Committee needs.

Don Spellman*
Prasad Kadambi
Chuck Moseley
Steve Stamm

Priority – 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 Standards Board, Consensus Committees, and to the NESCC as appropriate.

Jim August (SB)*
Jim Riley (NEI)
Mathew Paniker (NRC/SB)

External Communications – 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 the ANS representative on the NESCC.

Herb Massie (DNFSB)*
Tina Taylor (EPRI)
Ed Wallace (SB)
Stanley Levinson (JCNRM/SCoRA)

Internal Communications – 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 SC members grouping system and methods to encourage non-involved volunteers to become active WG members.

Mike Ruby (SB)
Bill Turkowski (SB)*
Jeff Brault (AGS)

Sales – double or triple our standards sales in the next 2 years

Steve Stamm (SB)
David Sachs (SB) *

Standards Coordinator – Single point reviewer of all PINS forms prior to SB approval to ensure that committee duplication of effort does not occur nor does the proposed standard conflict with those from other SDOs. Work with External Communications TG for conflicts with other SDOs.

Steve Stamm

* Interim Chair
** No CC Chairs on the Task Groups other than by personal preference

Attachment 2

Links Between ANS Standards Board and Other SDOs and Other Related Organizations			
Name of SDO/and Other Related Organizations	**Standards Committee Liaison**	**Link Adequate Y or N?**	**Next Actions Updated 8/6/2014**
ACI/AISC/ASCE	John Stevenson (ES)	Y	Retiring soon; should consider finding new liaison
AGS	Jeffery Brault (NRNF)	Y	
AIChE	William Bell (LLWR)	?	Was AIChE rep on N17 only. No longer serves as AIChe Rep in new CC. Confirm liaison status.
ANSI/ISO TC 85 SC 6 / NESCC / NRMCC	Prasad Kadambi	Y	
ASME NQA	Chuck Moseley	Y	
ASTM-C26		N	DJS action 3/31/14
EPRI	Tina Taylor	Y	Needs committee assignment
HPS	Richard Brey (SRA)	?	Need confirmation
IEEE/NPEC	Donald Spellman	Y	
INMM	Ronald Knief (SRA)	Y	
JCNRM/SCoRA	Stanley Levinson (JCNRM)	Y	
NCRP	Michael Corradini (SRA)	N	Request a more available member
NEI	James Riley	Y	
NFPA		N	Volunteer database searched.; no options found for NFPA rep.
WENRA	Robert Budnitz	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- American Society for Testing and Materials
C26 - Nuclear Fuel Cycle
EPRI - Electric Power Research Institute
HPS-Health Physics Society
IEEE - Institute of Electrical and Electronics Engineers
INMM-Institute of Nuclear Materials Management
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
NESCC - Nuclear Energy Standards Coordination Collaborative
NRMCC - Nuclear Risk Management Coordinating Committee

American Nuclear Society
Standards Committee

555 North Kensington Avenue
La Grange Park, Illinois
60526-5592 USA
708-579-8269 • standards@ans.org

May 9, 2014

The Honorable Howard Shelanski
Administrator, Office of Information and Regulatory Affairs
Office of Management and Budget
725 17th Street, N.W.
Washington, DC 20503

Dear Administrator Shelanski:

RE: "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities"

The American Nuclear Society (ANS) is a standards development organization (SDO) accredited under the rules of the American National Standards Institute (ANSI). ANS standards are widely used within the United States as well as internationally in all areas of nuclear science and technology. ANS considers the issues raised by the subject *Federal Register* notice to be of vital importance to its interests, and appreciates the opportunity to provide comments on the proposed revisions to Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities."

ANS's interest in federal participation in the development and use of voluntary consensus standards (VCSs) and in conformity assessment activities lies primarily in the implementation of the policies contained therein by the U.S. Nuclear Regulatory Commission (NRC), the U.S. Department of Energy (DOE), the Defense Nuclear Facilities Standards Board (DNFSB), and the National Institute of Standards and Technology (NIST), which is part of the Department of Commerce (DOC). The NRC has regulatory authority over most of the technical areas addressed by ANS. Comments to the notice from the ANS Standards Board are provided in Attachment A.

Thank you for the opportunity to comment on this important issue.

Respectfully submitted,

Donald J. Spellman, Chair
ANS Standards Board

Attachment

CC: Donald R. Hoffman, ANS President
Michaele C. Brady Raap, ANS Vice President/President-Elect
Robert C. Fine, JD, CAE, ANS Executive Director
Steven L. Stamm, ANS Standards Board Vice Chair
Rick Michal, ANS Director of Scientific Publications and Standards

ATTACHMENT A

ANS Standards Board Comments on a Proposed Revision to OMB Circular No. A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities"

***Preference for voluntary consensus standards (VCS)* –** The revised Circular provides good direction for maintaining agency preference for using voluntary consensus standards in Federal regulations and procurement. The ANS Standards Board recommends the following additional concept be added:

> When a VCS is not available, the agency should identify the need for such a standard to the appropriate SDO and work with that SDO to develop the standard. A non-consensus standard (NCS) may be used until such time as a VCS is made available or if an SDO is unable to develop a VCS.

***Guidance on use of standards and participation in standards development* –** In addition to the guidance included, the revised Circular should encourage agencies to identify standards needs as early as possible and to notify the appropriate SDO to allow the SDO the opportunity to evaluate its ability to support a VCS.

The Circular should caution agencies that prior to the use of international standards, they should provide other agencies, U.S. industry participants, and SDOs an opportunity to identify concerns regarding the use of a specific international standard that might provide an unfair advantage to international suppliers.

***Guidance on conformity assessment* –** The revised Circular should encourage agencies that do not have their own conformity assessment programs to recommend that conformity assessments performed by SDOs or an organization certified by the SDO be used. Nuclear liability protection should be extended to the SDO and SDO certified nuclear related conformity assessment organizations.

***Enhanced transparency* –** It should be identified that ANSI national standards requirements provide an adequate approach to public participation and transparency for SDOs that are ANSI members. Other SDOs and NCS not associated with ANSI should be encouraged to ensure public participation and transparency is incorporated in their standards development policies and procedures where possible at the same time protecting business sensitive and intellectual property information.

***Incorporating standards by reference in regulations* –** The Circular should include the following:

1. Clarify that "incorporation by reference" in a regulation is the preferred approach to endorsing VCS rather than extracting standards sections in whole or in part. Extraction of whole sections or paragraphs is not allowed by SDO copyright protection without a clear reference to the VCS in the body of the standard and in the reference section with title, version, and date noted.

2. If only a portion of a standard is applicable, a reference to the specific portion of the standard may be used with appropriate notation in the body of the standard and in the reference section with title, version, and date noted. Intellectual property rights and copyright protection must be protected by prior negotiation with the SDO or NCS developer.

3. If a standard is acceptable with some exceptions, the standard shall be referenced and the exceptions indicated in the body of the text or in a footnote. Intellectual property rights and copyright protection must be provided by prior negotiation with the SDO or NCS developer.

Intellectual property – The Circular shall clearly indicate that intellectual property rights and copyright protection remain the property of the SDO or NCS developer. In the case of the NCS developer, use of intellectual property in a regulation is allowed only after negotiation and release of the information from the NCS developer. VCS, due to their consensus nature and required public comment period, do not include intellectual property rights, however, VCS are protected by copyright and the VCS SDO must approve of any use of information in a regulation.

Ensuring the timely updating of standards – It should be noted in the Circular that ANSI policies (for those SDOs who are members of ANSI) provide an acceptable approach to maintaining standards current. Non-ANSI SDOs and NCS developers should require maintenance of standards currency in their internal standards development and maintenance policies and procedures.

Determining whether a voluntary standard is "reasonably available" – The Circular should make it clear that the SDO consensus process provides adequate opportunity for public input and review and are "reasonably available" during the approval process for a nominal fee (Unapproved VCS or NCS may not be used or quoted in agency regulations). Where standards development is being performed in support of an agency request, the agency should attempt to synchronize its regulation public review period so that it coincides with the public review period for the related standard.

"Reasonably available" for copyright VCS is meant to imply that VCS are available on commonly used electronic media to the general public for a minimal cost that is used to cover the SDO cost of development, maintenance, and publication of the VCS.

American Nuclear Society
Standards Committee

555 North Kensington Avenue
La Grange Park, Illinois
60526-5592 USA
708-579-8269 • standards@ans.org

Date

Name
Address

Dear [CC member]

Subject: _____Consensus Committee (CC Acronym) Assignment

Thank you for your expression of interest in the _____CC. I am pleased to invite you to become a member of this ANS Standards consensus committee.

The ANS Standards Committee, an accredited standards development organization of the American National Standards Institute (ANSI), develops American National Standards related to a wide range of nuclear topics that form the basis for much of the design and analyses performed by nuclear engineers and scientists that are critical to continued safe use of nuclear power. The ANS Standards Committee is managed by the ANS Standards Board and consists of eight consensus committees that are:

- Large Light Water Reactors (LLWR);
- Research and Advanced Reactors (RAR);
- Non-Reactor Nuclear Facilities (NRNF);
- Safety and Radiological Analyses (SRA);
- Joint Committee on Nuclear Risk Management (JCNRM); 1
- Nuclear Criticality Safety (NCS);
- Environmental and Siting (ES); and
- Fuel, Waste, and Decommissioning (FWD).

The scope of the _____ CC is:

-INSERT SCOPE STATEMENT

The _____CC meets (once/twice) per year concurrently with the ANS annual meetings, generally in June and November. The committee role is to manage the development and ballot for approval all of the standards under its purview. As a member you will be expected to support the consensus committee in the following activities:

- Perform technical review and ballot all standards assigned to your CC
- Help identify new areas for standards development
- Serve as a subcommittee chair, subcommittee member or participate in special task groups
- Assist in staffing subcommittees and working groups
- Attend at least a majority of ____CC meetings. It is strongly recommended that members appoint an alternate who will be able to attend meetings and vote when the primary member is unable to attend. A schedule of ANS meetings is available at http://www.ans.org/meetings/c_1.

- Understand and implement the American Nuclear Society Standards Committee Procedures Manual for Consensus Committees available at: http://www.ans.org/standards/resources/ .
- Participate in training new standards committee members
- Develop, review and/or approve PINS (Project Initiation Notification System) forms
- Develop, review and/or approve responses for standards Inquiries
- Support the Chair and Vice Chair in other activities as requested

In particular you should support the CC achievement of these goals:

1. Full ballot participation of consensus committee members
2. Increased involvement and direction to working groups prior to and during the development of standards
3. Increased evaluation of industry needs in the topical areas assigned to the consensus committees and increased identification and implementation of new standards activities
4. Improved management of the reaffirmation process of aging standards to implement a schedule of activities that results in required actions being completed before automatic ANSI expiration dates

Please indicate your acceptance of this new assignment by responding to this letter.

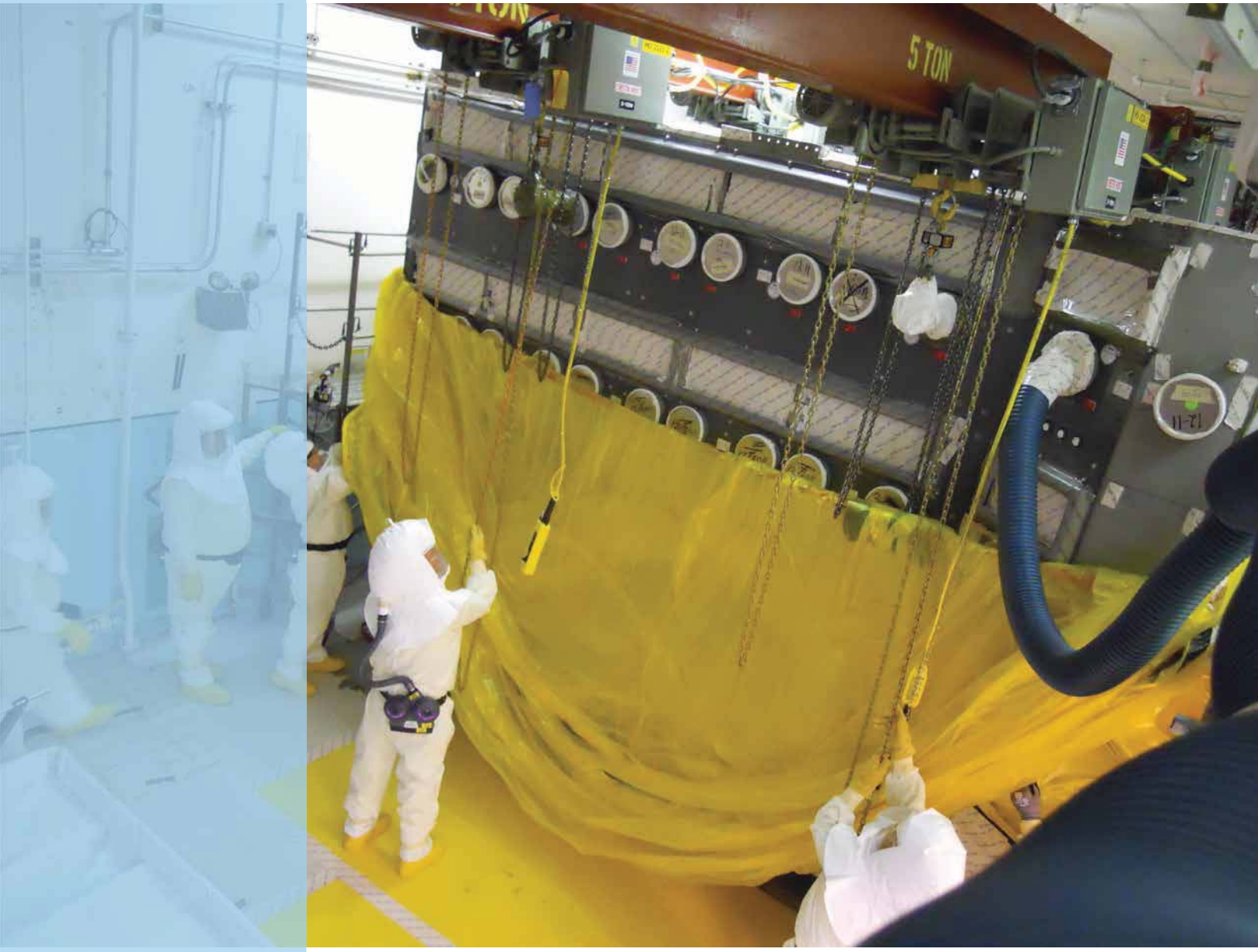
Thank you for interest in ANS standards and I look forward to your efforts to continue to improve the ANS standards program.

Sincerely,

XXXXXX

Chair, [CC name]
Address/email/phone

ANS



ANSI/ANS Standards for Use in Areas Related to Nuclear Technology

Introduction

This pamphlet has been designed to help international firms and government agencies understand and access American Nuclear Society (ANS) voluntary consensus standards that may be applicable for evaluating, siting, building, operating, supporting, and/or decommissioning nuclear facilities and other nuclear-related activities. ANS is an international, not-for-profit 501(c)(3) scientific and educational organization with a membership of approximately 11,000 scientists, engineers, educators, students, and other associate members.

ANS standards are developed using a strict set of rules that allows each standard to gain American National Standards Institute (ANSI) approval and to achieve the status of American National Standard.

ANS presently has more than 75 current American National Standards with at least 50 more currently being developed or revised. ANS standards, and standards of other similar professional societies, are used to support the general welfare by providing methods for users that are based the on extensive professional experience of cost-effective, deterministic, performance-based, risk-informed ways to ensure nuclear safety. Standards provide the "how" for nuclear regulatory authorities, engineers, scientists, designers, operators, constructors, and nuclear organizations to safely meet federal and state regulations through application of long-standing experience and good engineering practice.

Standards Usage

Standards provide logical, consensus-based methods for nuclear power plant suppliers, personnel, constructors, and operators so that they can perform in a manner that has been judged by their peers to be acceptable and, in some cases that satisfy federal regulations and enhance safety.

A standard can be defined as common and repeated use of rules, conditions, guidelines, or characteristics for products or related processes and production methods as well as related management systems practices.

Consensus standardization is a social process in which technical experts from public, private, and nonprofit sectors negotiate the direction and shape of technological change. Scholars, engineers, and other personnel in a variety of disciplines have recognized the importance of voluntary consensus standards as alternatives to other types of standards that arise through market mechanisms or to standards mandated by regulators.

Voluntary consensus standards give a common direction to follow for technical individuals on an engineering project, eliminating the need to invent or research guidelines on how to initially proceed on the project.

ANS standards, as well as those of many other organizations and industries, set forth the requirements for the design, manufacture, or operation of a piece of equipment. ANS standards can also address computer firmware and software or the necessary physical and functional features of equipment, its safe application, or some combination of these.

To operate a typical nuclear power plant, about 1,000 engineering codes and standards are needed, and some are used only for reference. A typical nuclear power plant has about 100,000 discrete components, and the various standards help orchestrate the integration of these components into a workable, reliable, and safe plant.

Some examples of nuclear facilities include

1. critical assemblies,
2. pressurized water reactor and boiling water reactor nuclear power plants,
3. gamma irradiation facilities,
4. nuclear waste storage sites,
5. industrial X-ray or neutron radiography facilities,
6. nuclear-powered vessels,
7. circular and linear particle accelerators,
8. radioactive calibration and check sources,
9. high-temperature gas-cooled reactor nuclear power plants,
10. spent fuel pools for research, test, and commercial nuclear power reactors,
11. radiochemical separations plants.

ANS standards can be classified into general categories and into more specific subcategories within the general categories. The presently used general categories are listed below, with some specific subcategories listed beneath each general category.

ANS Standards Categories and Subcategories

1. Reactors and Nuclear Facilities
   a. Nuclear power plant simulators for use in operator training and examination
   b. Fuel fabrication facility design criteria
   c. Containment system leakage testing requirements
   d. Criteria for planning, development, conduct, and evaluation of drills and exercises for emergency preparedness at nuclear facilities
2. Operational Analysis and Criticality Safety
   a. Radiation protection and shielding
   b. Radioactive source term for normal operation of light water reactors
   c. Nuclear criticality safety in operations with fissionable materials outside reactors
   d. Criteria for nuclear criticality safety controls in operations with shielding and confinement

3. Nuclear Environmental
   a. Earthquake instrumentation criteria for nuclear power plants
   b. Determine design-basis flooding at power reactor sites
   c. Mobile radioactive waste processing systems
   d. Reactor decommissioning
4. Risk Management
   a. Criteria for modeling design-basis accidental releases from nuclear facilities
   b. Probabilistic seismic hazards analysis
   c. Criteria for modeling real-time accidental release consequences at nuclear facilities

Some examples of ANS standard numbers and their titles include

- ANSI/ANS-19.3-2011, "Steady-state Neutronics Methods for Power Reactor Analysis"
- ANSI/ANS-3.11-2005 (R2010), "Determining Meteorological Information at Nuclear Facilities"
- ANSI/ANS-8.1-2014, "Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors" [revision of ANSI/ANS-8.1-1998 (R2007)]
- ANSI/ANS-58.14-2011, "Safety and Pressure Integrity Classification Criteria for Light Water Reactors" [revision of ANSI/ANS-58.14-1993 (W2003)]
- ANSI/ASME/ANS RA-S-2008 (RA Sa-2009/RA Sb-2013), "Standard for Level/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications" [incorporates ANSI/ANS-58.21-2007 (W2009), "External-Events PRA Methodology" and ANSI/ANS-58.23-2007 (W2009), "Fire PRA Methodology"]

Some examples of ANS standards under development or in revision include

- ANS-2.2, "Earthquake Instrumentation Criteria for Nuclear Power Plants" [revision of ANSI/ANS-2.2-2002 (W2012)]
- ANS-2.8, "Determining External Flood Hazards for Nuclear Facilities" [revision of ANSI/ANS-2.8-1992 (W2002)]
- ANS-10.8, "Non-Real Time, High-Integrity Software for the Nuclear Industry—User Requirements" (new standard)
- ANS/ASME RA-S-1.3, "Radiological Accident Offsite Consequence Analysis (Level 3 PRA) to Support Nuclear Installation Applications" [previously designated ANS/ASME-58.25]

ANS Standards Information and Purchasing

Interested parties can go to the ANS standards website at www.ANS.org/store/c_9 to:

- search for standards by title, designation, or keyword,
- review titles, abstracts, scopes, and costs for ANS standards, and
- purchase standards

ANS standards are reasonably priced and are readily available in hard copy (postal delivery) or electronic download (PDF format).

Please contact ANS at orders@ans.org or 708-579-8210 (toll free 800-323-3044) for questions regarding purchasing ANS standards. Contact standards@ans.org 708-579-8269 with questions regarding the status of an ANS standard.

For more information visit www.ANS.org/standards

American Nuclear Society
Standards Committee

555 North Kensington Avenue
La Grange Park, Illinois
60526-5592 USA
708-579-8269 • standards@ans.org

December 2, 2013

Mr. Eugene S. Grecheck
13802 Beechwood Point Rd
Midlothian, VA 23112-2531

RE: ANS/Utility Engagement Program

Dear Mr. Grecheck:

At your request to Dr. Prasad Kadambi at the Special Committee on Integration Oversight at the ANS winter meeting regarding how the ANS standards program could provide enhanced benefits to support the subject engagement program, members of the Standards Board have drafted a response for your consideration. The response includes some generic comments regarding the presentation slides used for the initial discussion with utilities, a list of recommended actions that could be presented to potential member utilities as standards benefits, and a listing of each of the ANS consensus committees and their scopes for general information. We hope these incentive suggestions would enhance the offer for utilities to join such a program.

The ANS Standards Committee is eager and willing to help secure this beneficial program between ANS and nuclear utilities and will respond to any questions or additional information you may desire.

Regards,

Donald J. Spellman, Chair
ANS Standards Board

Attachments

1) Comments on Presentation for the ANS Utility Engagement Program and Suggested Areas of Benefit
2) Scope Statements for ANS Consensus Committees

Cc: Donald R. Hoffman, ANS President
Robert C. Fine, JD, CAE, ANS Executive Director
Steven L. Stamm, ANS Standards Board Vice Chair
N. Prasad Kadambi, Past ANS Standards Board Chair
Diane Cianflone, Director of ANS Membership and Marketing
Rick Michal, Director of ANS Scientific Publications and Standards

Attachment 1

The following general comments pertain to the slide presentation for the ANS Utility Engagement Program:

1) There do not appear to be sufficient benefits to utilities discussed in the presentation to justify the amounts being requested. We need to have strong specific activities that will directly and indirectly benefit utility corporate members that align with ANS' role and capabilities.

2) It is important to remember that nuclear utility operators are focused on three things: how can we economically accept innovations that reduce cost, how can we continue to convince the general public of the benefits of nuclear power generation, and how can we more effectively protect the public, the sunk cost of our assets, and at the same time the safety of our workers and contractors.

3) The Utility Engagement Program will require a carefully orchestrated sales approach to be successful in recruiting utility members. Unless there have been discussions with and commitments obtained from utility CEOs ahead of time, it is not likely that the utilities will pay that much money for memberships. ANS needs to start with one most likely member to accept such a plan and gain a commitment from that CEO. Based on Mr. Gary Taylor being an ANS Board Member, Entergy would probably be a good first choice. This needs to be done in a face-to-face meeting at a very high level in the corporations.

4) The presentation has too much general ANS activities. This could be reduced and the focus changed to the specific strategically important benefits that members would obtain that non-members would not have.

5) One major potential value of ANS is to provide fair, unbiased, scientifically based information to the public, industry and government related to nuclear issues. We have a lot of room for improvement in this area. For this enhancement program, ANS should focus on each potential utility member's specific issues rather than general activities that benefit the entire industry.

6) ANS should not try to compete with NEI as a regulatory interface advocate or with INPO regarding operational excellence programs.

The following are specific suggested areas of potential benefits to provide to corporate members solicited through the ANS Utility Engagement Program. Some of these recommendations go beyond standards but deserve consideration.

1) **Encourage each member to appoint a single point of contact** for that entity on matters related to voluntary consensus standards much like current standards executives for DOE and NRC.

2) **Utility Executive Standards Advisory Committee** – The ANS Standards Committee will form a Utility Executive Standards Advisory Committee to be staffed with a member from each corporate member (the corporate standards executive), the ANS Executive Director, the chair and vice chair of the Standards Board, and the ANS standards secretary (as a non-voting member). The functions of this committee would be to provide recommended areas for standards development beneficial to utilities and help with allocation of utility resources to standards development. Business to be conducted on-line.

3) **Access to ANS standards** – A discount at the Information Center on Nuclear Standards (ICONS) toward purchase of a complete set of ANS standards and other useful benefits plus a discount on any additional standards or publications ordered via the ANS website.

   This should not be done by distributing all standards at no cost since utilities would have no incentive to continue membership once they had the full set of standards. It would be better to provide a one-time

discount for ICONS and a password that anyone in a member organization could use when ordering additional standards and publications that would expire if membership is not renewed.

4) **Membership on a standards consensus committee (CC)** – A corporate member would have the right to request that and be encouraged to nominate a senior member from its organization with knowledge in the area of a standards CC be appointed to a CC. The CC is the only area where industry, government, and regulatory personnel discuss and resolve technical issues without any inhibitions. A true consensus is determined based on the draft standard and comment resolutions by the working groups. A list of the ANS CCs and their scopes is attached.

5) **Right to participate in the Standards Committee Standards Strategic Plan review** – This could be done by teleconference that would allow the designated corporate standards executives to provide insights into standards that would fill longer-term needs of their organizations

6) **Right to review standards prior to issue** – Copies of standards at ballot will be sent to the corporate member's designated standards executive to coordinate review within its organization and submittal of any resultant comments.

7) **Priority handling for clarification of existing standards** – If a corporate member has a question of the intent of a portion of a standard; they can submit an inquiry and will be given priority handling. (Nominal 30 draft response time)

8) **Nuclear Standards News** – Subscription to be included in corporate membership for posting on corporate websites

9) **Standards writing group** – Corporate members will be given priority through the corporate standards executive in selection of members to participate on working groups. Participation in the activities described above represents tangible professional development for younger members of utility companies belonging to NA-YGN or Women in Nuclear and other such grassroots next-gen type of groups. All Project Initiation Notification System (PINS – i.e., project charters) forms will be provided to the corporate standards executive for consideration.

10) **Standards notifications** – Corporate standards executives will receive the ANS Standards Committee Report of Activities and notification of any events related to standards of their interest. A copy should be provided on initial meeting with the corporation.

11) **Nominations for ANS Board of Directors** – Corporate members would have the right to offer a senior person in their nuclear organization as a nominee for the ANS Board of Directors.

12) **Publications discount** - A 50% discount rate on all standards and ANS publications.

13) **Corporate Member Public Relations Committee** – This ANS Standing Committee provides recommendations for the development and implementations of public and government relations activities critical to the member nuclear power utilities.

We would be pleased to discuss these comments in more detail with you.

Submitted by:

Donald J. Spellman, ANS Standards Board Chair

Steven L. Stamm, ANS Standards Board Vice Chair

Dr. N. Prasad Kadambi, Past ANS Standards Board Chair

Attachment 2

SCOPE STATEMENTS FOR ANS CONSENSUS COMMITTEES

Large Light Water Reactor (LLWR) Consensus Committee Scope:

The LLWR Consensus Committee is responsible for the preparation and maintenance of voluntary consensus standards for the design, operation, maintenance, operator selection and training, and quality requirements for current operating nuclear power plants and future nuclear power plants that employ large station light water moderated, water-cooled reactors. The standards include the reactor island, balance of plant, and other systems within the plant boundary that affect safety and operations. The ANS Standards Committee Rules and Procedures shall be used to guide the activities of this consensus committee.

Research and Advance Reactor (RAR) Consensus Committee Scope:

The RAR Consensus Committee is responsible for the preparation and maintenance of voluntary consensus standards for the design, operation, maintenance, operator selection and training, and quality requirements for current and future research and test reactors including pulsed critical facilities, reactors used for the production of isotopes for industrial, educational, and medical purposes and current and advanced non-large LWRs. The scope includes but is not limited to: water-cooled and non-water cooled Small Modular Reactors, Generation III+ and IV reactors, and future non-light water cooled/moderated large commercial reactors.

The RAR standards include but are not limited to the design and operation of the nuclear island, the balance of plant, and other systems within the plant boundary affecting safety and operations. The ANS Standards Committee Rules and Procedures shall be used to guide the activities of this consensus committee.

Non-Reactor Nuclear Facilities (NRNF) Consensus Committee Scope:

The NRNF Consensus Committee is responsible for the preparation and maintenance of voluntary consensus standards for the safety analysis, design, maintenance, operator selection and training, and quality requirements for non-reactor nuclear facilities including facilities using radioactive isotopes, remote handling of radioactive materials, fuel processing, mixed oxide fuel processing and other fuel cycle facilities other than spent fuel handling and storage. The ANS Standards Committee Rules and Procedures shall be used to guide the activities of this consensus committee.

Safety and Radiological Analyses (SRA) Consensus Committee Scope:

The SRA Consensus Committee is responsible for the preparation and maintenance of voluntary consensus standards for physics methods and measurements for nuclear facilities, shielding materials and methods for shielding analyses, safety analyses and for the associated computational methods and computer codes. Input data for calculations and codes, such as nuclear cross sections, are included in this scope. The ANS Standards Committee Rules and Procedures shall be used to guide the activities of this consensus committee.

Environmental and Siting (ES) Consensus Committee Scope:

The ES Consensus Committee is responsible for the preparation and maintenance of voluntary consensus standards for all aspects of nuclear power plant and non-reactor nuclear facility siting, environmental assessment, environmental management, and the categorization of natural phenomena hazards at these public and private sector nuclear facilities.

Many of the ES standards presently support the siting and environmental needs of the civilian nuclear industry and the Department of Energy (DOE) in meeting 10 CFR 50, 10 CFR 51 and 10 CFR 52 licensing requirements and compliance with 40 CFR enabling regulations associated with the Clean Air Act, Clean Water Act, Safe Drinking Water Act, Resource Conservation and Recovery Act, Comprehensive Environmental Response Compensation and Liability Act, and National Environmental Policy Act. The ANS Standards Committee Rules and Procedures shall be used to guide the activities of this consensus committee.

Fuel, Waste, and Decommissioning (FWD) Consensus Committee Scope:

The FWD Consensus Committee is responsible for the preparation and maintenance of voluntary consensus standards for the design, operation, maintenance, operator selection and training, quality requirements of new and used fuel transport, storage and related handling facilities; including high level/TRU, greater-than-Class C, low level, and mixed waste processing and facilities, and for the decommissioning of commercial, educational, research and government facilities. The ANS Standards Committee Rules and Procedures shall be used to guide the activities of this consensus committee.

Joint Committee on Nuclear Risk Management – ANS/ASME (JCNRM)

The JCNRM Consensus Committee is responsible for the preparation and maintenance of voluntary consensus standards that establish safety and risk criteria and methods for completion of probabilistic risk analysis (PRA), risk management, and risk assessments and for applications of PRA methods upon concurrence of the ANS Standards Board. These criteria and methods are applicable to design, development, construction, operation, decontamination, decommissioning, waste management, and environmental restoration for nuclear facilities. Activities of the consensus committee shall be guided by the Procedures for ASME Codes and Standards Development Committees but shall also meet the intent of ANS Standards Committee Rules and Procedures unless specifically authorized by the ANS Standards Board.

Nuclear Criticality Safety Consensus Committee

The NCS consensus committee is responsible for the preparation and maintenance of voluntary consensus standards for determining the potential for nuclear criticality of fissile material in all facilities excluding the reactor plant and fuel handling facilities, for the prevention of accidental criticality in those facilities, for mitigating consequences of accidents should they occur, and for the prevention of Anuclear chain reactions in all activities associated with handling, storing, transporting, processing, and treating fissionable nuclides. The ANS Consensus Committee Rules and Procedures shall be used to guide the activities of this consensus committee.

Standards Sales Report
October 16, 2013 - May 31, 2014

Designation & Title of Standard	# Sold Paper / Electronic	Total
ANS-1-2000;R2007;R2012, Conduct of Critical Experiments	0/2	72.00
ANS-2.3-2011, Estimating Tornado, Hurricane, and Extreme Straight Line Wind Characteristics at Nuclear Power Plants	1/5	408.00
ANS-2.8-1992;W2002, Determining Design Basis Flooding at Power Reactor Sites	1/1	326.80
ANS-2.15-2013, Criteria for Modeling and Calculating Atmospheric Dispersion of Routine Radiological Releases from Nuclear Facilities	1/3	652.50
ANS-2.21-2012, Criteria for Assessing Atmospheric Effects on the Ultimate Heat Sink	0/1	49.50
ANS-2.26-2004;R2010, Categorization of Nuclear Facility SSCs For Seismic Design	1/3	454.00
ANS-2.27-2008, Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments	0/1	121.00
ANS-2.29-2008, Probalistic Seismic Hazard Analysis	0/4	526.00
ANS-3.1-1993;R1999;W2009, Selection, Qualification Training of Personnel for Nuclear Power Plants	0/3	245.00
ANS-3.2-2012, Managerial, Administrative, and Quality Assurance Controls for the Operational Phase of Nuclear Power Plants	3/4	841.60
ANS-3.4-2013, Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants	3/1	499.70
ANS-3.5-2009, Nuclear Power Plant Simulators for Use in Operator Training and Examination	1/3	451.00
ANS-3.8.7-1998;W2008, Criteria for Planning, Development, Conduct and Evaluation fo Drills and Exercises for Emergency Preparedness	0/1	64.00
ANS-3.11-2005;R2010, Determining Meteorological Information at Nuclear Facilities	01	123.00
ANS-5.1-2005, Decay Heat Power in LWRs	5/6	1,630.20
ANS-5.4-2011, Method for Calculating the Fractional Release of Volatile Fission Products from Oxide Fuel	0/4	305.00
ANS-6.1.2-2013, Group-Averaged Neutron and Gamma-Ray Cross Sections for Radiation Protection and Shielding Calculations for Nuclear Power Plants	3/2	239.50
ANS-6.1.2-1999;R2009;W2013, Neutron and Gamma-Ray Cross Sections for Nuclear Radiation Protection Calculations for Nuclear Power Plants	0/1	32.40
ANS-6.3.1-1987;R1998;R2007, Program for Testing Radiation Shields in Light Water Reactors (LWR)	0/2	156.00
ANS-6.4-2006, Nuclear Analysis and Design of Concrete Radiation Shielding for Nuclear Power Plants	1/3	832.00
ANS-6.4.2-2006, Specifications for Radiation Shielding Materials	0/3	234.00
ANS-6.4.2-1995;R1997;R2004;W2006, Specifications for Radiation Shielding Materials	0/1	190.00
ANS-6.4.3-1991;W2001, Gamma-Ray Attenuation Coefficients and Buildup Factors for Engineering Materials	2/2	885.40
ANS-6.6.1-1987;R1998;R2007, Group-Averaged Neutron and Gamma-Ray Cross Sections for Radiation Protection and Shielding Calculations for Nuclear Power Plants	0/1	681.60
ANS-8.1-1983;R1988;W1998, Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	0/1	79.00
ANS-8.1-1998;R2007, Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors	12/4	1,475.80
ANS-8.3-1997;R2003, R2012, Criticality Accident Alarm Systems	1/3	388.80
ANS-8.5-1996;R2002;R2007, Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material	0/1	58.00
ANS-8.6-1983;R1988;R1995;R2001;R2010, Safety in Conducting Subcritical Neutron-Multiplication	0/1	29.00
ANS-8.7-1998:R2007, Guide for Nuclear Criticality Safety in the Storage of Fissile Materials	0/3	253.00
ANS-8.9-1987;R1995;W2000, Nuclear Criticality Safety Guide for Pipe Intersections Containing Aqueous Solutions of Enriched Uranyl Nitrate	1/0	50.40
ANS-8.10-1983;R1988;R1999;R2005, Criteria for Nuclear Criticality Safety Controls	0/1	47.00

Designation & Title of Standard	# Sold Paper / Electronic	Total
ANS-8.12-1987;R1993;R2002;R2011, Nuclear Criticality Control and Safety of Plutonium-Uranium Fuel Mixtures Outside Reactors	0/2	181.00
ANS-8.14-2004, Use of Soluble Neutron Absorbers in Nuclear Facilities Outside Reactors	0/2	90.00
ANS-8.15-1981;R1987;R1995;R2005, Nuclear Criticality Control of Special Actinide Elements	0/1	166.00
ANS-8.17-2004;R2009, Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors	0/4	180.00
ANS-8.19-2005, Administrative Practices for Nuclear Criticality Safety	20/4	948.20
ANS-8.20-1991;R1999;R2005, Nuclear Criticality Training	0/3	137.00
ANS-8.21-1995;R2001;R2011, Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors	0/2	90.00
ANS-8.22-1997;R2006, Nuclear Criticality Safety Based on Limiting & Controlling Moderators	0/3	163.00
ANS-8.23-2007;R2012, Nuclear Criticality Accident Emergency Planning and Response	0/4	443.20
ANS-8.24-2007;R2012, Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations	0/6	620.00
ANS-8.26-2007;R2012, Criticality Safety Engineer Training and Qualification Program	1/2	116.00
ANS-8.27-2008, Burnup Credit for LWR Fuel	0/3	132.70
ANS-10.2-2000;R2009, Portability of Scientific and Engineering Software	0/3	136.30
ANS-10.3-1995;W2005, Documentation of Computer Software	0/1	56.00
ANS-10.4-2008, Verification and Validation of Non-Safety Related Scientific and Engineering Computer Programs for the Nuclear Industry	0/3	354.20
ANS-10.5-2006;R2011, Accommodating User Needs in Scientific and Engineering Computer Software Development	0/3	162.40
ANS-10.7-2013, Non-Real-Time, High-Integrity Software for the Nuclear Industry—Developer Requirements	3/2	469.00
ANS-14.1-2004;R2009, Operation of Fast Pulse Reactors	0/1	42.30
ANS-15.1-2007,R2013, The Development of Technical Specifications for Research Reactors	1/2	285.00
ANS-15.4-2007, Selection and Training of Personnel for Research Reactors	0/2	134.00
ANS-15.8-1995;R2005,R2013, Quality Assurance Program Requirements for Research Reactors	0/3	185.60
ANS-15.10-1994;W2004, Decommissioning of Research Reactors	1/0	108.00
ANS-15.11-2009, Radiation Protection at Research Reactors	0/1	124.00
ANS-15.21-1996;R2006, Format and Content for Safety Analysis Reports for Research Reactors	1/0	111.60
ANS-16.1-2003;R2008, Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure	1/2	405.00
ANS-18.1-1999;W2009, Radioactive Source Term for Normal Operation of LWRs	0/1	95.00
ANS-19.1-2002;R2011, Nuclear Data Sets for Reactor Design Calculations	0/1	57.60
ANS-19.3-2011, Steady-State Neutronics Methods for Power Reactor Analysis	0/1	104.40
ANS-19.3.4-2002;R2008, The Determination of Thermal Energy Deposition Rates in Nuclear Reactors	0/1	56.00
ANS-19.6.1-2011, Reload Startup Physics Tests for Pressurized Water Reactors	0/2	209.00
ANS-19.6.1-2005;W2011, Reload Startup Physics Tests for Pressurized Water Reactors	01	108.00
ANS-19.10-2009, Methods for Determining Neutron Fluence in BWR	01	54.00
ANS-19.11-1997;R2002, Calculation and Measurement of the Moderator Temperature Coefficient of Reactivity for Water Moderated Power Reactors	0/2	172.40
ANS-40.35-1991;W2001, Volume Reduction of Low-Level Radioactive Waste or Mixed Waste	0/1	90.00
ANS-40.37-2009. Mobile Low Level Radioactive Waste Processing Systems	0/4	531.70
ANSI/ANS-41.5-2012, Verification and Validation of Radiological Data for Use in Waste Management and Environmental Remediation	0/2	322.00

Designation & Title of Standard	# Sold Paper / Electronic	Total
ANS-51.1-1983;R1988;W2000, Nuclear Safety Criteria for the Design of Stationary PWRs	2/2	782.90
ANS-53.1-2011, Nuclear Safety Design Process for Modular Helium-Cooled Reactor Plants	1/2	633.50
ANS-54.1-1989;W1999, General Safety Design Criteria for a Liquid Metal Reactor Nuclear Power Plant	0/1	71.10
ANS-55.1-1979;W1990, Solid Radioactive Waste Processing System for Light Water Cooled Reactor Plants	1/1	298.00
ANS-55.6-1993;R1999;R2007, Liquid Radioactive Waste Processing System for Light Water Reactor Plants	0/1	264.00
ANS-56.8-2002;R2011, Containment System Leakage Testing Requirements	0/1	135.00
ANS-56.4-1983;R1986;W2012, Pressure and Temperature Transient Analysis for Light Water Reactor Containments	0/1	124.00
ANS-56.11-1988;W2000, Design Criteria for Protection Against the Effects of Compartment Flooding in LWR Plants	0/1	70.00
ANS-57.1-1992;R1998;R2005, Design Requirements for Light Water Reactor Fuel Handling Systems	0/1	64.00
ANS-57.2-1983;W1999; Design Requirements for LWR Spent Fuel Facilities at NPPs	0/1	114.00
ANS-57.3-1983;W1993, Design Requirements for NE Storage Facilities as LWR Plants	0/1	58.00
ANS-57.5-1996;R2006, Light Water Reactors Fuel Assembly Mechanical Design and Evaluation	0/3	253.00
ANS-57.8-1995;R2005, Fuel Assembly Identification	0/1	38.70
ANS-58.2-1988;W1998, Design Basis for Protection of Light Water Nuclear Power Plants Against the Effects of Postulated Pipe Rupture	1/2	536.90
ANS-58.6-1996;R2001;W2011, Criteria for Reomote Shutdown for Light Water Reactors	1/0	51.00
ANS-58.8-1994;R2001;R2008, Time Responsive Design for Safety-Related Operator Actions	2/2	315.30
ANS-58.9-2002;R2009, Single Failure Criteria for LWR Safety-Related Fluid Systems	2/2	176.00
ANS-58.14-2011, Safety and Pressure Integrity Classification Criteria for LWRs	3/5	1,477.20
ANS-58.14-1993;W2004, Safety and Pressure Integrity Classification Criteria for LWRs	0/1	176.00
ANS-58.21-2007;W2009, External Events PRA Methodology	0/1	235.00
ANS-59.3-1992;R2002;W2012, Nuclear Safety Criteria for Control Air Systems	0/1	56.00
ANS-59.51-1989;W1997, Fuel Oil Systems for Emergency Diesel Generators	1/2	226.20
ANS-59.52-1998;R2007, Lubricating Oil Systems for Safety-Related Emergency Diesel Generators	1/0	63.00
ASME/ANS RA-S-1.4-2013, PRA Standard for Advanced Non-LWR NPPs	0/4	1,950.00
Misc Standards: Historical standards, drafts, bulk sales	N/A	356.00
GRAND TOTAL		**28,566.60**

ANS Standards Staff/Secretary Report
June 2014

Staff Activities of Significance

- Updated the ANS Website with new webpages for all consensus committees and the RP3C. Consensus committee webpages now include member lists and organizational charts.
- The volunteer opportunities section of the ANS webpage was updated to reflect the new organizational structure.
- Launched new web-based ANS Workspace, training conducted in March 2014, all consensus committee and the Standards Board members have been registered and are using the site
- Subcommittees and working groups are starting to be added to our web-based workspace; an additional training session is anticipated to occur at the end of July/early August 2014
- Worked with ANS Outreach Department to use ANS LinkedIn Group and Nuclear Café (via tweets) to solicit members for standards working groups.
- Facilitated the publication of a standards pamphlet for e-broadcast to increase standards sales. The pamphlet will be distributed to 600 plus addresses and is posted on the ANS website at http://www.ans.org/standards/resources/downloads/docs/ans-standards-use-areas-related-nuclear-technology.pdf
- Completed the preparation and publication of the 2013 Standards Committee Report of Annual Activities. The report is publically available at http://www.ans.org/standards/resources/downloads/docs/comactivitiesreport2013.pdf
- Prepared and published three issues of *Nuclear Standards News* in 2014

Standard Approved by ANSI

The ANS Standards Committee received American National Standards Institute (ANSI) approval of ANSI/ANS-8.1-2014, "Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors," (revision of ANSI/ANS-8.1-1998 (R2007)).

Standards Projects Initiated in 2014

Project Initiation Notification Systems (PINS) forms were approved and submitted to ANSI to announce the initiation of the following 4 standards projects:

- ANS-3.13, "Nuclear Facility Reliability Assurance Program (RAP) Development Criteria" (new standard)
- ANS-3.14, "Process for Aging Management and Life Extension for Non-Reactor Nuclear Facilities"(new standard)
- ANS-6.6.1, "Calculation and Measurement of Direct and Scattered Gamma Radiation from LWR Nuclear Power Plants" (revision of ANSI/ANS-6.6.1-1998 (R2007))
- ANS-8.24 Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations (revision of ANSI/ANS-8.24-2007 (R2012))

ISO/TC 85/SC 6 Progress Report

- The ANS took over the role of secretary to the ISO Technical Committee 85 Subcommittee (SC) 6 effective January of 2013; ANS was host to the SC 6 Annual meeting during the ANS Annual Meeting in June of 2013. The SC 6 meeting scheduled to be held with ISO TC 85 from June 2 - June 6, 2014, in Moscow, Russia, was cancelled. The next SC 6 meeting is tentatively planned for June 5-6, 2015, prior to the ANS Annual Meeting in San Antonio, Texas.
- Year to date, 6 proposed international standards projects have been registered as active. Proposed international standards that are based on ANS standards are indicated in parenthesis below:
    - ISO/NP 18075, "Steady-State Neutronics Methods for Power-Reactor Analysis" (ANS-19.3)

- ISO/NP 18077, “Reload Startup Physics Tests for Pressurized Water Reactors” (ANS-19.6.1)
- ISO/NP 18156, “Technical Specification Guide for Decay Heat Computational Codes in Nuclear Reactors” (ANS-5.1)
- ISO/NP 18195, “Method for Justification of Nuclear Safety Fire Partitioning Efficiency in Water Cooled Nuclear Power Plants” (no comparable ANS standard)
- ISO/NP 18229, “Essential Technical Requirements for GEN IV Nuclear Reactors” (no comparable ANS standard)
- ISO/NP 19226, “Determination of Neutron Fluence and Displacements per Atom (dpa) in Reactor Vessel and Internals” (ANS-19.10)

- SC 6 proposed project include the following:
  - ISO/NP 18583, “Mobile Equipments for Emergency Intervention on Nuclear Installation” (no comparable ANS standard)
  - ISO/NP 19492, “Technical Specifications for Research Reactors” (ANS-15.1)
  - ISO /PWI 19462, “Criteria for Assessing Atmospheric Effects on the Ultimate Heat Sink” (ANS-2.21)

ANS Standards Staff Participation on Other Committees

- ANS standards staff supported the Nuclear Risk Management Coordinating Committee meeting on February, 19, 2014, in St. Petersburg, Florida.
- ANS standards staff attended the ANS/ASME Joint Committee on Nuclear Risk Management meetings February 18 through 20, 2014, in St. Petersburg, Florida
- ANS standards staff supports the National Council on Radiation and Protection Liaison Committee.

White Paper

Defense in Depth

DRAFT

June 2014

INTRODUCTION

The philosophy behind defense in depth (DID) is layers of protection and a high degree of redundancy and diversity.

The Nuclear Regulatory Commission (NRC) defines "Defense-in-Depth" as follows:

> "An approach to designing and operating nuclear facilities that prevents and mitigates accidents that release radiation or hazardous materials."

The NRC goes on to say:

> "The key is creating multiple independent and redundant layers of defense to compensate for potential human and mechanical failures so that no single layer, no matter how robust, is exclusively relied upon. Defense-in-depth includes the use of access controls, physical barriers, redundant and diverse key safety functions, and emergency response measures."

The International Atomic Energy Agency's (IAEA) concept of "defence in depth," which concerns the protection of both the public and workers, is fundamental to the safety of nuclear installations. As was stated in the Basic Safety Principles for Nuclear Power Plants INSAG-3, (INTERNATIONAL NUCLEAR SAFETY ADVISORY GROUP, Basic Safety Principles for Nuclear Power Plants, Safety Series No. 75-INSAG-3, IAEA, Vienna (1988) in relation to the safety of nuclear power plants,

> "All safety activities, whether organizational, behavioural or equipment related, are subject to layers of overlapping provisions, so that if a failure should occur it would be compensated for or corrected without causing harm to individuals or the public at large. This idea of multiple levels of protection is the central feature of defence in depth..."

The basic premise remains the same. Consider the following:

"I believe that the *very best-laid plans* can accommodate many imperfections, weaknesses, or failings" (**Remarks of Nils J. Diaz Chairman, U.S. Nuclear Regulatory Commission Preparedness and Defense-in-Depth June 3, 2004).**

The NRC has long had a philosophy that captures this reality. It is called “defense-in-depth philosophy.” It is an approach to ensuring protection.

The concept of "defense-in-depth" must be the center point of one’s approach to ensuring public health and safety. It goes beyond the equipment. Defense-in-depth means high quality design, fabrication, construction, inspection, and testing; redundancy and diversity in safety and non-safety related equipment, the latter to protect the safety-related equipment safety function(s); procedures and strategies; and emergency preparedness.

BACKGROUND

The ***September 11, 2001 event*** elevated the awareness to many in this country to the importance of physical security and emergency preparedness. Significant enhancements were forced upon the industry after 2001 event. Security orders were issued in 2002 that required the nuclear industry to re-visit and tighten existing policies and procedures.

One of the more significant conclusions that resulted from September 11, 2001 event review of security issues was how tightly interconnected were nuclear safety, security and emergency preparedness. Many of the same issues involved in avoiding and mitigating nuclear accidents are in acts of terrorism. The initiating events may differ but defense-in-depth applies in similar ways to both.

Since the September 11, 2001 event, the government, state and even local authorities, and the private sector have responded in such a manner that has increased our security. In the public domain, this has meant giving up something that has been routine for the public for a number of years in order to elevate the critical nature of security, such as tightened airport security. On the nuclear industry side, the NRC has required enhanced security measures for the defense of nuclear power reactors all directed at one fundamental goal: how best to protect our people, with the appropriate resources placed at the right places. These elements include:

- Enhanced access controls, to prevent unauthorized entry of persons and materials to nuclear facilities;
- Enhanced work and training requirements for security personnel, to increase their capabilities and experience to detect and respond to threats;
- Enhanced Force-on-Force security exercises at nuclear power plants;
- Revised Design Basis Threat (addressing vehicle bomb threats, land-based and water-based assaults) and associated defensive measures;

- Enhanced mitigative procedures and strategies based on the established concept of Severe Accident Management Guidelines; and
- Enhanced emergency preparedness.

The ***March 2011 Fukushima event*** added an additional challenge to the nuclear industry that re-opened areas of perceived general safety concerns by the public. This led to further assessments on seismic and flooding issues, the need for remote level indication to protect the spent fuel, additional mitigative measures to cope with complete loss of power and cooling, and enhancement in emergency preparedness.

It is without question that the NRC has carried out extensive analyses on the potential vulnerability of nuclear facilities to these type of events. These studies confirm that the likelihood of damaging the reactor core and releasing radioactivity that could affect the public is low. Structures that withstand severe external events (hurricanes, tornadoes, and floods), and safety systems that include redundancy demonstrate means of dealing with potential adverse events. Moreover, Emergency operating procedures and enhanced severe accident management guidelines are currently mitigating the effects of accidents or terrorist attacks on nuclear power plants.

Thus, Defense-in-depth provides the time needed to use the right protective strategies. This approach addresses and accommodates the possibility of failures. The NRC's defense-in-depth is now strengthened by incorporating the dynamics of risk-informed and performance-based decision making.

DISCUSSION OF RISK-INFORMED AND PERFORMANCE-BASED DECISION-MAKING

The ***traditional approach*** to levels of defense includes the following:

- Level 1: prevention of abnormal operation and failures
- Level 2: control of abnormal operations and detection of equipment failures
- Level 3: control of accidents with the design basis
- Level 4: control of severe conditions through prevention of progressions and mitigation of consequences
- Level 5: mitigation of external radiological consequences

The strategy is prevention first. This is done by compensating for potential human errors and equipment failures. If prevention fails, then limiting the consequences becomes the defense in

depth protective measure.

The ***risk-informed, performance-based approach*** captures already in-situ requirements such as SBO (Station Blackout) and puts more of a focus on important systems, in other words "focus on what really matters." Operational experience has become a key element for making the regulatory process less burdensome. And use of performance based regulations have become almost second nature to the nuclear industry. The issue that concerns the industry is that design basis accidents do not reflect the operating experience and current understanding of today such as use of PRA.

The definition of the risk-informed approach as provided by the NRC (Commission's White Paper, USNRC, 1999 and Commissioner Apostolakis, NRC Risk-Informed and Performed Based Initiatives, April 13, 2013") is as follows:

> "A risk-informed approach to regulatory decision-making represents a philosophy whereby risk insights are considered together with other factors to establish requirements that better focus licensee and regulatory attention on design and operational issues commensurate with their importance to public health and safety."

The objective is to merge traditional and risk-based approaches together to obtain the more realistic approach to applying DID, that is, the combination of both approaches. Still challenges remain that the industry still faces with a "risk approach." This includes the need for the regulator to understand and use risk methodology to the level of their acceptability; that DID when applying the risk-informed performed base approach could include guidelines and even some performance indicators or metrics; and the approach would undoubtedly require new or revised consensus codes and standards, including design standards.

Regulatory Guide, 1.174 Revision 2, "AN APPROACH FOR USING PROBABILISTIC RISK ASSESSMENT IN RISK-INFORMED DECISIONS ON PLANT-SPECIFIC CHANGES TO THE LICENSING BASIS"

Regulatory Guide 1.174 provides the regulatory guidance currently that the nuclear industry applies for use of PRA. When using PRA in risk informed decision-making, the user needs to adhere to some guidelines.

The engineering evaluation should evaluate whether the impact from the proposed licensing basis change is consistent with the defense-in-depth philosophy. The objective is to ensure that

the philosophy of defense-in-depth is maintained, not to prevent changes in the way defense-in-depth is achieved.

The licensee should also assess whether the proposed change meets the defense-in-depth principle. The defense-in-depth philosophy is maintained if the following occurs:

- A reasonable balance is preserved among prevention of core damage, prevention of containment failure, and consequence mitigation.
- Over-reliance on programmatic activities as compensatory measures associated with the change in the licensing basis is avoided.
- System redundancy, independence, and diversity are preserved commensurate with the expected frequency, consequences of challenges to the system, and uncertainties
- Defenses against potential common-cause failures are preserved, and the potential for the introduction of new common-cause failure mechanisms is assessed.
- Independence of barriers is not degraded.
- Defenses against human errors are preserved.
- The intent of the plant's design criteria is maintained.

Use of similar assessments is used in determining adequate safety margins. The engineering evaluation should assess whether the impact of the proposed change maintains sufficient safety margin. The licensee is expected to choose the method of engineering analysis appropriate for evaluating whether sufficient safety margins would be maintained if the proposed licensing basis change were to be implemented.

IMPLEMENTATION OF DEFENSE-IN-DEPTH PRINCIPLES IN ANSI STANDARDS

Conclusion and Recommendation

Discussions have occurred for some time on the need to ensure DID principles are incorporated into industry standards. This objective is to ensure that the multiple layers of defense provide the necessary barriers to protect the general public. This white paper attempts to present approaches, methodologies, and historical events coupled with the NRC's current position on use of available DID approaches that would meet this objective.

Consensus of options considered to implement DID principles in ANS standards are:

- Single DID standard
- DID white paper with implementation through changes to existing standards when required and development of new standards
- Combination of 1 and 2 above
- DID white paper followed by implementation decision
- Changes to existing standards be implemented via GDC, system design, or event-based standards

The suggested approach for incorporating DID was deferred until after the white paper was prepared and further considered by the Consensus Committees.

DOE/NRC Licensing Framework

The Advanced Reactor Design Criteria were distributed to stakeholders the end of March along with Sodium Fast Reactor Design Criteria and Modular High Temperature Gas Reactors Design Criteria. . Distribution included the members of the standards board.

A stakeholder's workshop was held in Washington DC April 15 and 16. Written comments were received including several excellent comments from several Standards' Board members. Over 230 comments were received on all three sets of criteria.

All comments were reviewed by the team and responses to each have been formulated. These comments have resulted in significant changes in all three sets of design criteria.

One aspect was to clarify the relationship between the Appendix A GDC, the ARDC, and the technology specific DC (SFR and mHTGR). The new ARDC are meant to fulfill the role of guidelines for non LWRs referred to in the introduction to Appendix A. The technology specific DC are meant to serve as further clarification of the use of the ARDC in formulation of an applicant's Principal Design Criteria required by regulations.

A second change was to resolve the varied terminologies that were created to be all encompassing to the advanced reactor types. It was decided to use brackets in the ARDC's for the names of systems used in Appendix A of the GDCs. The various reactor types such as SFRs and mHTGRs can then substitute the specific terminology for the bracketed terms. This is similar to the process used in adaption of standardized technical specifications to specific reactor designs.

An example of the use of brackets is shown below.

GDC 14 *Reactor coolant pressure boundary*

The reactor coolant pressure] boundary shall be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture

ARDC 14

The reactor [coolant pressure] boundary shall be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture

SFR DC 14

The reactor primary coolant boundary shall be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture

The revised ARDC, SFR-DC, and mHTGR-DC will be distributed to the shareholders July 31. A second workshop will be held at the Bethesda North Marriott in Washington DC on July 16 and 17.

ANS 50.1 Status

Mark Linn, WG Chair

Reno ANS Meeting 2014

Current Activities

- Existing LWRs
  - Have little interest in a new design standard that promotes RIPB concepts. While many have and use PRAs, their use is very targeted to specific issues. A broad RIPB standard would be viewed more of a potential problem than help, no matter how many "exclusions" are placed in the document
- New Reactor Designs
  - Combined licenses previously issued
    - Summer and Vogtle
  - Design Certifications previously issued
    - ABWR(GE)
    - System 80+ (Westinghouse)
    - AP600 (Westinghouse)
    - AP1000 (Westinghouse)
  - Design Certification applications under review
    - ESBWR (AREVA NP)
    - US-APWR (Mitsubishi Heavy Ind.)
    - ABWR DC Renewal (GE-Hitachi NE)
    - ABWR DC Renewal (Toshiba)

2

Current Activities (cont)

- Small Modular Reactors
  - DOE Initiative to promote accelerated deployment
    - $452 M over 6 years (FY 2012 = $67.0 M/FY 2014 request $70.0 M)
    - mPower – DC/CP submittal 2015/Approval by 2018
    - NuScale – DC submittal 2015/Approval by 2018
    - EPRI Utility Requirement Document for SMRs for generic design requirements
    - Advanced Reactor Licensing Initiative
      - Preparation of draft general design criteria
      - Advanced Reactor, Sodium Fast Reactor, MHTGR
  - United States Senate
    - Senate Bill S.512
    - DOE Secretary (with private sector cooperative agreements)
      - develop a standard design for each of 2 small modular reactors
      - obtain a design certification from the NRC for the 2 designs by January 1, 2018
      - obtain a combined license from the NRC for the 2 designs by January 1, 2021

3

Current Activities (cont)

- Small Modular Reactors (Cont)
  - SMReactor Designs under development
    - Light Water Reactors
      - Babcock and Wilcox mPower Reactor
      - Holtec Inherently Safe Modular Underground Reactor 160
      - NuScale Power Module
      - Westinghouse SMR
    - HTGRs
      - Next Generation Nuclear Plant
      - GA Gas Turbine Modular Helium Reactor
      - Pebble Bed Modular Reactor Ltd
    - Liquid Metal and Gas-Cooled Fast Reactors
      - GE Hitachi Nuclear Energy Power Reactor Innovative Small Module
      - GA Energy Multiplier Module
      - Gen4 Energy – Gen4 Module
      - Toshiba Super-Safe, Small, and Simple (4S)
  - Pre application activities for the following designs
    - Next Generation Nuclear Plant
    - NuScale
    - mPower
    - Westinghouse SMR
    - Holtec SMR-160

4

- Other recent interactions
- Teleconference between iPWR designer group and ANS 50.1
  - February 27, 2014
  - Linn, Spellman
  - Designer Group
    - DOE-funded out of INL (Richard Schultz)
    - To improve resolution of common design and licensing issues
    - Designs represented:
      - mPower (Eric Williams)
      - NuScale (Kent Welker)
      - Holtec (Tom Marcille)
      - Westinghouse (Matt Smith)
  - After significant discussion the bottom line was the group will assess their support for this effort and will get back to us. Such documents were perceived as representing a potential problem to the approval processes currently taking shape. No further information has been received. No response received to a subsequent inquiry to Schultz.

5

- Conclusions?
  - A new RIPB design standard for light water reactors seems to be very far behind the curve
  - A lengthy process for approval of such a standard would seem to only serve to further distance current reactor design efforts from ANS support.
  - It is not at all clear there is any support for a RIPB design standard related to light water reactors.
  - There are some indications that designers would prefer such a standard not be prepared.
  - May be time to rethink current path in order to put the ANS out in front of the curve for reactor designs

6

- Proposal
  - Redirect ANS 50.1 to a general, technology-neutral design standard for the incorporation of risk-informed and performance-based principles into a reactor design. Remove the LWR focus.
  - Prepare the standard to interface with "companion" technology- or design-specific standards that would originate out of the Research and Advanced Reactor CC.
  - ANS 50.1 would be the single reference regarding the use of RIPB principles in generic design issues such as defense-in-depth, single-failure, classification of components, beyond design basis, quantitative safety measures.
  - This single reference would alleviate lower tier technology-specific standards from having to address these same issues each time.
  - Allows efficient coordination with NRC and stakeholders
  - As newer safety topics such as worker safety, security, emergency preparedness arise, their RIPB aspects can be addressed via single reference

7

American Nuclear Society

Large Light Water Reactor Consensus Committee

Balance of Interest (June 2014)

Architect-Engineer (1)

Johnson-Turnipseed, Earnestine (shares vote with J. Saldarini w/same parent company)	Bechtel Corporation

Consultant (5)

Gebers, Steven	Quantum Nuclear Services
Glover, James	Graftel, Inc.
Kreider, Leroy "Rocky"	Engineering Planning & Management, Inc.
Lloyd, Evan	Exitech Corporation
Markovich, Ronald	Contingency Management Consulting

Government Agency (3)

Carpenter, Gene	U.S. Nuclear Regulatory Commission
Guha, Pranab	U.S. Department of Energy
Massie, Jr., Herbert	Defense Nuclear Facilities Safety Board

Individual (3)

Reuland, William	Individual
Ruby, Robert "Mike"	Individual
Stamm, Steven	Individual

National Laboratory (1)

Linn, Mark	Oak Ridge National Laboratory

Owner/Operator (4)

Brown, Charles	Southern Nuclear Operating Company
Bruno, Ronald	Tennessee Valley Authority
Florence, James	Nebraska Public Power District
Bell, William	South Carolina Electric & Gas Co.

Society (1)

Moseley, Jr., Charles	ASME NQA Liaison (Individual)

Vendor (4)

Gardner, Darrell	Generation mPower, LLC
Loewen, Eric	GE Hitachi Nuclear Energy
McFetridge, Robert	Westinghouse Electric Company, LLC
Meneely, Timothy	Westinghouse Electric Company, LLC

Voting Summary

Architect-Engineer (1)	5%
Consultant (5)	23%
Government Agency (3)	14%
Individual (3)	14%
National Laboratory (1)	5%
Owner/Operator (4)	18%
Society (1)	5%
Vendor (4)	18%
TOTAL VOTES (22)	100%

American Nuclear Society
Research and Advanced Reactors Consensus Committee
Balance of Interest (June 2014)

Architect-Engineer (2)

Grenci, Tony	Chicago Bridge & Iron Federal Services
Peres, Mark	Fluor Enterprises Inc.

Consultant (1)

August, James	CORE, Inc.

Government Agency (3)

Adams Jr., Alexander (Shares vote with T. Kevern also with NRC)	U.S. Nuclear Regulatory Commission
Lawson, David	U.S. Department of Energy
O'Kelly, Sean (Shares vote with T. Myers also with NIST)	National Institute of Standards & Technology

Individual (3)

Carter, Robert	Individual
Schmidt, Theodore	Individual
Turk, Richard	Individual

National Laboratory (2)

Flanagan, George (Shares vote with B. Bevard also with ORNL)	Oak Ridge National Laboratory
Morrison, Marya	Idaho National Laboratory

Owner (1)

Adkins, Gary	Tennessee Valley Authority

University (3)

Blandford, Edward	University of New Mexico
Foyto, Leslie	University of Missouri
Reese, Steven	Oregon State University

Vendor (1)

Memmott, Matthew*	Westinghouse Electric Company, LLC

*Accepted a position at BYU effective 8/18/14 and will be reclassified as "University." Additional representation from the "Vendor" category will be sought.

Voting Summary

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

American Nuclear Society
Non-Reactor Nuclear Facilities Consensus Committee
Balance of Interest

Architect-Engineer (3)

Eble, Robert	AREVA Inc.
Gupta, Mukesh	URS Safety Management Solutions
Mazzola, Carl	CB & I Special Projects Group

Government Agency (4)

Hicks, Jerry	U.S. Department of Energy (National Nuclear Security Administation*)
Massie, Jr., Herbert	Defense Nuclear Facilities Safety Board
O'Brien, James	U.S. Department of Energy
Smith, Brian	U.S. Nuclear Regulatory Commission

Individual (1)

Brault, Jeffery	Individual

National Laboratory (2)

Bari, Robert	Brookhaven National Laboratory
Spellman, Donald	Oak Ridge National Laboratory

University (1)

Modarres, Mohammad	University of Maryland

Vendor (2)

Miller, James	SABIA, Inc.
Wheeler, Jennifer	Nuclear Fuel Services, Inc.

Voting Summary

Architect-Engineer (3)	23%
Government Agency (4)	31%
Individual (1)	8%
National Laboratory (2)	15%
University (1)	8%
Vendor (2)	15%
TOTAL VOTES (13)	100%

*The National Nuclear Security Adminstration is a semi-autonomous agency under DOE.

American Nuclear Society

Safety and Radiological Analyses Consensus Committee

Balance of Interest (June 2014)

Architect-Engineer (1)	
Morrell, Keith	Savannah River Nuclear Solution

Consultant (3)	
Amato, Richard	Bechtel Marine Propulsion Corporation
Gupta, Mukesh	URS Safety Management Solutions
Rombough, Charles	CTR Technical Services, Inc.

Individual (2)	
Carter, Robert	Individual
Weitzberg, Abraham	Individual

National Laboratory (4)	
Brady Raap, Michaele	Pacific NW National Laboratory
Cokinos, Dimitrios	Brookhaven National Laboratory
Dudziak, Donald	Los Alamos National Laboratory
Smetana, Andrew	Savannah River National Laboratory

Society (2)	
Brey, Richard	HPS Rep. (Employed by Idaho State Univ.)
Corradini, Michael	NCRP Rep. (Employed by Univ. of Wisc.-Madison)

University (2)	
Hertel, Nolan	Georgia Institute of Technology
Sanders, Charlotta	University of Las Vegas - Nevada

Vendor (1)	
Alpan, F. "Arzu"	Westinghouse Electric Company, LLC

Voting Summary

Architect-Engineer (1)	7%
Consultant (3)	20%
Individual (2)	13%
National Laboratory (4)	27%
Society (2)	13%
University (2)	13%
Vendor (1)	7%
TOTAL VOTES (15)	100%

AMERICAN NUCLEAR SOCIETY (ANS)/AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
JOINT COMMITTEE ON NUCLEAR RISK MANAGEMENT (JCNRM)
BALANCE OF INTEREST BY REPORT (JUNE 2014)

Owners (5)
Victoria K. Anderson, Nuclear Energy Institute (AO)
C. Rick Grantom, South Texas Project NOC (AO)
H. Alan Hackerott, Omaha Public Power District (AO)
Gregory A. Krueger, Exelon Nuclear (AO)
Stuart R. Lewis, Electric Power Research Institute (AI)

Architect-Engineers (1)
Gilbert L. Zigler, Enercon Services (AB)

Vendors (5)
Dennis W. Henneke, General Electric (AK)
Kenneth L. Kiper, Westinghouse Electric Company (AK)
Stanley H. Levinson, AREVA (AK)
Raymond E. Schneider, Westinghouse Electric Co., LLC (AK)
James W. Young, General Electric (AK)

Consultants (6)
Paul J. Amico, Hughes Associates, Inc. (AU)
James R. Chapman, Scientech (AU)
Eugene A. Hughes, ETRANCO (AU)
Barry D. Sloane, ERIN Engineering and Research, Inc. (AU)
Douglas E. True, ERIN Engineering and Research, Inc. (AU)
Donald J. Wakefield, ABS Consulting (AU)

Government Agencies (2)
Mary Drouin, U.S. NRC (AT)
Richard H. ("Chip") Lagdon, U.S. DOE (AT)

National Laboratories (4)
Robert A. Bari, Brookhaven National Laboratory (AI)
Robert J. Budnitz, Lawrence Berkeley National Laboratory (AI)
Jeffrey L. Lachance, Sandia National Laboratories (AI)
Martin B. Sattison, Idaho National Laboratory (AI)

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

Societies (0)

Individuals (5)
Sidney A. Bernsen (AF)
Karl N. Fleming, KNF Consulting Services (AF)
Shigeo Kojima, Kojima Risk Institute, Inc. (AF)
Mayasandra K. (Ravi) Ravindra, MKRavindra Consulting (AF)
Ian B. Wall (AF)

TOTAL = 29 members

Vote Summary:	
Owners	5
Architect-Engineers	1
Vendors	5
Consultants	6
Government Agencies	2
National Laboratories	4
Universities	1
Societies	0
Individuals	5
TOTAL	29

May 7, 2014

American Nuclear Society
Nuclear Criticality Safety Consensus Committee
Balance of Interest (June 2014)

Consultant (2)	
Reed, Raymond	URS Professional Solutions LLC
Taylor, Richard	INM Nuclear Safety Services

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

Individual (2)	
Bidinger, George	Individual
Hopper, Calvin	Individual

National Laboratory (1)	
Westfall, Robert "Michael"	Oak Ridge National Laboratory

Society (3)	
Eby, Robert	AIChE Rep. (Employed by USEC, Inc.)
Knief, Ronald	INMM Rep. (Employed by Sandia Nat'l Laboratories)
Murray, Scott	HPS Rep. (Employed by General Electric)

University (1)	
Busch, Robert	University of New Mexico

Vendor (4)	
Doane, William	AREVA Inc.
Paulson, Lon	GE Hitachi Nuclear Energy
Shackelford, William	Nuclear Fuel Services, Inc.
Wetzel, Larry	Babcock & Wilcox Nuclear Operations Group

Voting Summary

Consultant (2)	13%
Government Agency (3)	19%
Individual (2)	13%
National Laboratory (1)	6%
Society (3)	19%
University (1)	6%
Vendor (4)	25%
TOTAL VOTES (16)	100%

American Nuclear Society
Environmental & Siting Consensus Committee
Balance of Interest (June 2014)

Architect-Engineer (1)

Vigeant, Stephen	Chicago Bridge & Iron Federal Services
(Shares vote with J. Downing & C. Mazzola also with CB&I)	

Consultant (2)

Brandon, Lisa	Geosyntec Consultants, Inc.
Call, Jennifer	Omicron Research Corporation

Government Agency (3)

Bellinger, Thomas	Y-12 National Security Complex
(Shares vote with R. Hunt also with Y-12)	
Carpenter, Robert	U.S. Nuclear Regulatory Commission
(Shares vote with L. Parks also with NRC)	
O'Brien, James	U.S. Department of Energy

Individual (3)

Bryson, Kevin	Individual
Savy, Jean	Individual
Stevenson, John	Individual

National Laboratory (1)

Hossain, Quazi	Lawrence Livermore National Laboratory

University (1)

Rasmussen, Todd	University of Georgia

Vendor (1)

Gao, Yan	Westinghouse Electric Company, LLC

Vote Summary

Architect-Engineer (1)	8%
Consultant (2)	17%
Government Agency (3)	25%
Individual (3)	25%
National Laboratory (1)	8%
University (1)	8%
Vendor (1)	8%
TOTAL VOTES (12)	100%

American Nuclear Society

Fuel, Waste, and Decommissioning Consensus Committee

Balance of Interest (June 2014)

Architect-Engineer (2)

Lewis, Donald	Chicago Bridge & Iron
Schilthelm, Steven	B&W mPower, Inc.

Consultant (1)

Eggett, Donald	AMEC AES, Inc.

Individual (1)

Brault, Jeffery	Individual

National Laboratory (2)

Lott, Sheila	Los Alamos National Laboratory
Spellman, Donald	Oak Ridge National Laboratory

Owner (2)

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

Vendor (3)

Ake, Timothy	AREVA Federal Services, LLC
(shares vote with S. Bader also with AREVA Federal Services)	
Kota, Anoop	NAC International
Sanders, Mitchell	Westinghouse Electric Company, LLC

Vote Summary

Architect-Engineer (2)	18%
Consultant (1)	9%
Individual (1)	9%
National Laboratory (2)	18%
Owner (2)	18%
Vendor (3)	27%
TOTAL VOTES (11)	100%

Large Light Water Reactor (LLWR) Consensus Committee
Chairman's Report to the Standards Board
June 17, 2014 ● Reno, Nevada

Projects in need of support (chair/members) to be initiated (4)

- ANS-56.1, "Containment Hydrogen Control" (reinvigoration of withdrawn project)
- ANS-58.2, "Design Basis for Protection of Light Water Nuclear Power Plants Against the Effects of Postulated Pipe Rupture" (reinvigoration of historical standard ANSI/ANS-58.2-1988)
- ANS-58.11, "Design Criteria for Safe Shutdown Following Selected Design Basis Events in Light Water Reactors" (reinvigoration of historical standard ANSI/ANS-58.11-1995 (R2002))
- ANS-59.3, "Nuclear Safety Criteria for Control Air" (reinvigoration of historical standard ANSI/ANS-59.3-1992 (R2002))

PINS in Development (1)

- ANS-58.6, "Criteria for Remote Shutdown for Light Water Reactors Facilities" (reinvigoration of historical standard ANSI/ANS-58.6-1996 (R2001))

Standards in Development – Approved PINS (8)

- ANS-3.5, "Nuclear Power Plant Simulators for Use in Operator Training and Examination" (revision of ANSI/ANS-3.5-2009)
- 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)
  ****Once ANS-3.8.7 is completed, a path forward for completing the remaining emergency preparedness standards will be determined. 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-18.1, "Radioactive Source Term for Normal Operation of Light Water Reactors" (revision of historical standard ANSI/ANS-18.1-1999)
- ANS-50.1, "Nuclear Safety Criteria for the Design of Stationary Light Water Reactor Plants" (new standard)
- ANS-51.10, "Auxiliary Feedwater System for Pressurized Water Reactors" (revision of ANSI/ANS-51.10-1991 (R2008))
- ANS-56.8, "Containment Leakage Testing Requirements" (revision of ANSI/ANS-56.8-2002 (R2011))
- ANS-58.8, "Time Response Design Criteria for Safety-Related Operator Actions" (revision of ANSI/ANS-58.8-1994 (R2008))

Delinquent Standards (5+ years since ANSI approval) (6)

- ANSI/ANS-51.10-1991 (R2008) "Auxiliary Feedwater System for Pressurized Water Reactors" (revision initiated)
- ANSI/ANS-58.3-1992 (R2008), "Physical Protection for Nuclear Safety-Related Systems and Components" (inactive)
- ANSI/ ANS-58.8-1994 (R2008), "Time Response Design Criteria for Safety-Related Operator Actions" (revision initiated)
- ANSI/ANS-58.9-2002 (R2009), "Single Failure Criteria for Light Water Reactor Safety-Related Fluid Systems" (inactive)
- ANSI/ANS-59.51-1997 (R2007), "Fuel Oil Systems for Safety-Related Emergency Diesel Generators" (inactive)
- ANSI/ANS-59.52-1998 (R2007), "Lubricating Oil Systems for Safety-Related Emergency Diesel Generators" (inactive)

Responses to Inquiries in Development (0)

- An inquiry was received on ANSI/ANS-3.5-2009, "Nuclear Power Plant Simulators for Use in Operator Training and Examination," on 4/3/12. The inquirer submitted a request on 4/11/14 that his inquiry be dropped.
- The committee has no other open inquiries that need to be addressed.

Future Plans

Due to our first meeting being held the day after the SB meeting, future plans have not been discussed by the LLWR. However, we plan to discuss the following:

- Targeting our resources to standards most needed that can be accomplished in time to be effective
- Revisiting standards for response to Fukushima
- Application EPRI TR 105396 and JCNRM Subcommittee on Risk Application to standards
- Coordination of standards with NRC endorsement , vendor needs, industry organizations, and other SDOs producing standards in similar areas
- Our standards process
- The market for ANSI standards

Research & Advanced Reactors (RAR) Consensus Committee Chairman's Report to the Standards Board

June 17, 2014, Meeting ● Reno, Nevada

PINS in Development (1)

- ANS-15.15, "Criteria for the Reactor Safety Systems of Research Reactors" (revision of historical standard ANSI/ANS-15.15-1978 (R1986))

Standards in Development – Approved PINS (6)

- ANS-15.2, "Quality Control for Plate-type Uranium-Aluminum Fuel Elements" (revision of ANSI/ANS-15.2-1999 (R2009))
- ANS-15.4, "Selection and Training of Personnel for Research Reactors" (revision of ANSI/ANS-15.4-2007)
- ANS-15.8, "Quality Assurance Program Requirements for Research Reactors" (revision of ANSI/ANS-15.8-1995 (R2013))
- ANS-15.16, "Emergency Planning for Research Reactors" (revision of ANSI/ANS-15.16-2008)
- ANS-20.1, "Nuclear Safety Criteria and Design Process for Fluoride Salt-Cooled High-Temperature Reactor Nuclear Power Plants" (new standard)
- ANS-54.1, "Nuclear safety Criteria and Design Process for Liquid-Sodium-Cooled Reactor Nuclear Power Plants" (revision of historical standard ANSI/ANS-54.1-1989)

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

- ANSI/ANS-15.2-1999 (R2009), "Quality Control for Plate-type Uranium-Aluminum Fuel Elements" (revision initiated)
- ANSI/ANS-15.4-2007, "Selection and Training of Personnel for Research Reactors" (revision initiated)
- ANSI/ANS-15.16-2008, "Emergency Planning for Research Reactors" (revision being initiated)

Responses to Inquiries in Development (0)

The committee has not received any inquiries on standards.

Future Plans

- Task Advanced Reactor SC chairman (Bruce Bevard) with forming a group within his subcommittee to identify needed SMR or advanced SMR reactor standards.
- Explore the impact of the joint DOE/NRC Advanced Reactor Generic GDC development tasks on ANS-53.1, ANS-54.1 and ANS-20.1.
- Determine a final disposition of ANS-50.1 in either RAR or LLWR consensus committees.
- Address the delinquent standards listed above (ANS-15) including the proposed revisions and expected dates for completion.

Non Reactor Nuclear Facilities (NRNF) Consensus Committee
Chairman's Report to the Standards Board
June 17, 2014, Meeting ● Reno, Nevada

Standards in Development – Approved PINS (2)

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

Standards at Ballot (NFSC)/Resolving Comments (1)

- ANS-58.16, "Safety Categorization and Design Criteria for Non-Reactor 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.

Future Plans

The consensus committee will be focused on:

- Review of final draft for ANS-57.11
- Supporting development of 1st draft of ANS-3.14
- Addressing any actions need to support ANS-58.16 following balloting
- Analyzing inactive standards and potential benefits for re-activating them and developing any needed papers justifying reactivating the standards (and including path forward to accomplish this).

Safety & Radiological Analyses (SRA) Consensus Committee
Chairman's Report to the Standards Board
June 17, 2014, Meeting ● Reno, Nevada

PINS in Development (1)

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

Standards in Development – Approved PINS (9)

- ANS-5.1, "Decay Heat Power in Light Water Reactors" (revision of ANSI/ANS-5.1-2005)
- 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-6.6.1, "Calculation and Measurement of Direct and Scattered Gamma Radiation from LWR Nuclear Power Plants" (revision of ANSI/ANS-6.6.1-1987 (R2007))
- ANS-10.8," Non-Real Time, High-Integrity Software for the Nuclear Industry: User Requirements" (new standard)
- ANS-19.1, "Nuclear Data Sets for Reactor Design Calculations" (revision of ANSI/ANS-19.1-2002 (R2011))
- ANS-19.9, "Delayed Neutron Parameters for Light Water Reactors" (new standard)
- ANS-19.11, "Calculation and Measurement of the Moderator Temperature Coefficient of Reactivity for Pressurized Water Reactors" (revision of ANSI/ANS-19.11-1997 (R2011))
- ANS-19.12, "Nuclear Data for the Production of Radioisotope" (new standard)

Delinquent Standards (5+ years since ANSI approval) (8)

- ANSI/ANS-5.1-2005, "Decay Heat Power in Light Water Reactors" (revision initiated)
- ANSI/ANS-6.3.1-1997 (R2007), "Program for Testing Radiation Shields in Light Water Reactor (LWR)" (chair needed)
- ANSI/ANS-6.4-2006, "Nuclear Analysis and Design of Concrete Radiation Shielding for Nuclear Power Plants" (chair needed)
- ANSI/ANS-6.4.2-2006, "Specification for Radiation Shielding Materials" (revision initiated)
- ANSI/ANS-6.6.1-1987 (R2007), "Calculation and Measurement of Direct and Scattered Gamma Radiation from LWR Nuclear Power Plants" (revision being initiated)
- ANSI/ANS-10.4-2008, " Verification and Validation of Non-Safety-Related Scientific and Engineering Computer Programs for the Nuclear Industry"
- ANSI/ANS-19.3.4-2002 (R2008) "The Determination of Thermal Energy Deposition Rates in Nuclear Reactors" (chair needed)
- ANSI/ANS-19.10-2009, "Methods for Determining Neutron Fluence in BWR and PWR Pressure Vessel and Reactor Internals (new chair committed)

Responses to Inquiries in Development (0)

The committee has not received any inquiries on standards.

Future Plans

- Seek owner (utility) member for the CC.
- Work with M&C Division to development a permanent chair for ANS-10.

JCNRM Chairman's Report to the Standards Board
June 17, 2014 • Reno, Nevada

Standard Published

A new addendum to the JCNRM's main "flagship" PRA methodology standard for LWR PRA was approved and has been published. This "addendum" known colloquially as "Addendum B" and formally designated as ASME/ANS RA-b-2013, contains changes that are mostly of a clarifying or consistency-across-the-standard nature, plus bringing many citations and other things up to date. Work on the next revision, which the JCNRM will call a "new edition", is already under way. This new version 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 schedule for this next version is not yet clear, but is expected to be complete by early 2016.

Standards in Development

NOTE #1: This list includes both standards being developed by the JCNRM that began under ANS-RISC before the ANS-ASME merger, and those being developed under JCNRM that began under ASME before the merger.

NOTE #2: Please note that the numerical designators below (like ANS 58.22, etc.) are the old numbers. The JCNRM has provided new designators shown below.

NOTE #3: 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.

ANS-58.22-201x, "Low Power Shutdown PRA Methodology"

- Working group is led by Don Wakefield, underway since 1999.
- After several ballots and comment resolutions, the WG has completed a final draft that was issued for ballot. The ballot closed on 12/17/2013.
- A very strong majority voted for approval; however, the working group is working on resolving comments.

ASME/ANS RA-S-1.2-201x , "Severe Accident Progression and Radiological Release (Level 2) PRA Methodology to Support Nuclear Installation Applications" (previously ANS/ASME-58.24)

- Writing group is led by Ed Burns, underway since 2005. Burns took over as chair from Mark Leonard in early 2013. Leonard had led the WG since its inception.
- After several ballots and comment resolutions, the WG has completed a final draft which was issued for ballot to the JCNRM. The ballot closed on 5/13/14.
- A very strong majority voted for approval; however, the working group is resolving comments.

ASME/ANS RA-S-1.3-201x, "Standard for Radiological Accident Offsite Consequence Analysis (Level 3 PRA) to Support Nuclear Installation Applications" (previously ANS/ASME-58.25)

- Working group is led by Keith Woodard, underway since 2005.
- After several ballots and comment resolutions, the WG has completed a final draft and it is being prepared for submittal to the JCNRM for final ballot. We expect that this ballot will occur in the third quarter of 2014.

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

- Working group is led by Karl Fleming, underway since 2007.
- A final JCNRM ballot was held in spring 2013, and the ballot was successful. This standard was published on December 9, 2013, for trial use and pilot application for a 36- month period.

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

- Working group is led by Jim Chapman, underway since 2007.
- A final JCNRM ballot was held in spring 2013, and it was approved by the JCNRM. Final comment resolution is now under way. Additional changes are being made to the draft, in part to accommodate applicability to SMRs (small modular reactors) that use light-water coolant. We expect that the final draft will be ready for ballot by the JCNRM in the third quarter of 2014.

ANS RISC merger with ASME CNRM to form a new "Joint Committee on Nuclear Risk Management"

The merger 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 four subcommittees and a series of about ten writing groups and working groups, and a half-dozen short-term project teams. The two societies' Boards approved the "Rules and Operating Procedure" in final form in late 2011, and the new structure has also been put into place. The new JCNRM is now formally in existence and has been operating as such since spring 2012, after having operated informally as a single joint entity for over a year prior to that. With this series of steps in place, the former ANS RISC Committee and the former ASME Committee on Nuclear Risk Management have effectively ceased to exist.

The JCNRM "business" aspect is not yet in place. Issues of revenue sharing and sharing of administrative tasks still need to be formally resolved. Negotiations have been advancing recently after a long period of slower movement. The outlines of the final business arrangement are now in place, although nothing has been "approved" in final form yet. The tentative arrangement consists of 50-50 revenue and cost sharing; ANS assumption of the administrative work of editing and publishing all new JCNRM standards; and ASME assumption of the work of arranging meetings, managing the finances, managing the ballot process, and a few other administrative tasks.

It is a pleasure to report that there seems to be almost no "friction" between the two societies in terms of how this merger has worked so far or will work in the future. The two co-chairs and the staff of the two societies are working well together and rather little in the way of a legacy of the two societies' former roles remains as an impediment.

Standards Inquiries and Delinquent Standards

No inquiries have been received recently. The JCNRM does not have any delinquent standards in need of maintenance.

Future Plans

The JCNRM's Executive Committee has been meeting more-or-less bi-weekly by conference call to plan the next two years' activities. The main effort is to develop the next version of the main PRA Combined Standard, which is planned now for early 2016. 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 2-3 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, although a few other problems have been discovered during use. A number of what the JCNRM has called "cross cutting issues" have also been identified, each of which is being evaluated and 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 is to ballot and issue the four new standards under development that are discussed in the opening section of this report. This is a major effort, involving several dozen volunteers.

The JCNRM has also recently established a separate new subcommittee, the Subcommittee on Risk Applications, with the charter to be the JCNRM interface with ANS and ASME (and other SDOs in the future) so as to provide

assistance to other standards-development projects whenever such a project desires to develop a new standard (or modify an existing standard) to provide risk-informed or performance-based requirements. This new JCNRM Subcommittee will be the JCNRM interface with the ANS Standards Board's new Risk-informed and Performance-based Principles Policy Committee (RP3C.)

In early 2013, the JCNRM appointed two task groups, one to recommend whether it should begin the development of a new standard for PRA to evaluate the risk from spent fuel pools, and another to evaluate the need and efficacy of a possible new standard covering PRA for small modular reactors of various designs. At its February 2014 meeting in Palm Beach, FL, the JCNRM decided not to embark on a new standard for spent-fuel-pool PRA at this time because significant work is now underway to develop an improved PRA methodology for that work. The JCNRM decided to await the completion of that work. The issue of whether to develop a new PRA standard for SMRs is still under consideration. There is also some early discussion on whether the JCNRM should start working on PRA standards for non-reactor nuclear facilities, which standards are of great interest to the U.S. Department of Energy.

Nuclear Criticality Safety Consensus Committee
Chairman's Report to the Standards Board
June 17, 2015, Meeting ● Reno, Nevada

PINS in Development (1)

- ANS-8.22, "Nuclear Criticality Safety Based on Limiting and Controlling Moderators" (revision of ANSI/ANS-8.22-1997 (R2006))

PINS in Approval Process/Resolving Comments (1)

- ANS-8.29, "Nuclear Criticality Safety in Fuel Reprocessing Facilities" (new standard)

Standards in Development – Approved PINS (9)

- ANS-8.3, "Criticality Accident Alarm System" (revision of ANSI/ANS-8.3-1997 (R2003))
- ANS-8.10, "Criteria for Nuclear Criticality Safety Controls in Operations with Shielding and Confinement" (revision of ANSI/ANS-8.10-1983 (R2005))
- ANS-8.12, "Nuclear Criticality Control and Safety of Plutonium-Uranium Fuel Mixtures Outside Reactors" (revision of ANSI/ANS-8.12-1987 (R2011))
- ANS-8.20, "Nuclear Criticality Safety Training" (revision of ANSI/ANS-8.20-1991 (R2005))
- ANS-8.21, "Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors" (revision of ANSI/ANS-8.21-1995 (R2011))
- ANS-8.24, "Validation of Neutron Transport Methods for Nuclear Criticality Safety Calculations" (revision of ANSI/ANS-8.24-2007)
- ANS-8.26, "Criticality Safety Engineer Training and Qualification Program"(revision of ANSI/ANS-8.26-2007 (R2012))
- ANS-8.27, "Burnup Credit for LWR Fuel" (revision of ANSI/ANS-8.27-2007)
- ANS-8.28, "Administrative Practices for the Use of Non-Destructive Assay Measurements for Nuclear Criticality Safety" (new standard)

Standards at Ballot/Resolving Comments (3)

- ANS-8.15, "Nuclear Criticality Control of Selected Actinide Nuclides" (revision of ANSI/ANS-8.15-1981 (R2005))
- ANSI/ANS-8.17-2004 (R2009), "Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors" (reaffirmation of ANSI/ANS-8.17-2004 (R2009))
- ANS-8.19, "Administrative Practices for Nuclear Criticality Safety" (revision of ANSI/ANS-8.19-2005)

Approved Standards (1)

ANSI/ANS-8.1-2014, "Nuclear Criticality Safety in Operations With Fissionable Materials Outside Reactors" (revision of ANSI/ANS-8.1-1998 (R2007))

Responses to Inquiries in Development (1)

An inquiry on ANSI/ANS-8.19-2005, "Administrative Practices for Nuclear Criticality Safety," and ANSI/ANS-8.26-2007 (R2012), "Criticality Safety Engineer Training and Qualification Program," was received 5/20/14. The inquiry is currently being reviewed by both working groups.

Responses to Inquiries Released (2)

- A response to an inquiry received 1/11/12 on ANSI/ANS-8.3-1997 (R2003), "Criticality Accident Alarm System Inquiry," was approved and issued 5/21/14.
- A response to an inquiry received 1/9/13 on ANSI/ANS-8.19-2005, "Administrative Practices for Nuclear Criticality Safety," was approved and issued 12/19/13.

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

- ANSI/ANS-8.10-1983 (R2005), "Criteria for Nuclear Criticality Safety Controls in Operations with Shielding and Confinement" (revision initiated)
- ANSI/ANS-8.15-1981 (R2005), "Nuclear Criticality Control of Special Actinide Elements" (revision initiated)
- ANSI/ANS-8.19-2005, "Administrative Practices for Nuclear Criticality Safety" (revision at ballot with N16)
- ANSI/ANS-8.20-1991 (R2005), "Nuclear Criticality Safety Training" (revision balloted by ANS-8; comments being resolved)
- ANSI/ANS-8.27-2008, "Burnup Credit for LWR Fuel" (revision balloted by ANS-8; comments being resolved)

Future Plans

- With the recent approval of ANSI/ANS-8.1-2014, we will be coordinating efforts among the various working groups to make sure each standard interfaces properly with ANS 8.1.
- I am working with the ANS-8 subcommittee chair to determine how to speed up the revision process and identify any resources needed so these revisions move forward as quickly as possible.
- We have had some problems with timely responses to inquiries, so I am working with the ANS-8 subcommittee chair to correct that problem.
- We have put together a list of all definitions used in the ANS-8 standards and will be working to use a single definition of a term throughout the standards.

Environmental & Siting (ES) Consensus Committee
Chairman's Report to the Standards Board
June 17, 2014, Meeting ● Reno, Nevada

Projects in Consideration for Development/Volunteer Support Needed (13)

- ANS-2.6, "Guidelines for Estimating Present and Forecasting Future Population Distributions Surrounding Nuclear Facility Sites" (new standard)
- ANS-2.11[1], "Guidelines for Evaluating Site-Related Geotechnical Parameters at Nuclear Power Sites" (reinvigoration of historic standard ANSI/ANS-2.11-1978 (R1989))
- ANS-2.13, "Evaluation of Surface-Water Supplies for Nuclear Power Sites" (reinvigoration of historical standard ANSI/ANS-2.13-1979 (R1989))
- 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 ANSI/ANS-2.19-1981 (R1990))
- 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 ANSI/ANS-18.5-1982/redesignated ANS-2.25) (Approved PINS but no membership)
- ANS-18.2.1, "Methods for Inferring Environmental Doses" (new standard)
- ANS-18.3.1, "Entrainment: Guide to Steam Electric Power Plant Cooling System Siting, Design and Operation for Controlling Damage to Aquatic Organisms" (new standard)
- ANS-18.3.2, "Cold Shock: Guide to Steam Electric Power Plant Cooling System Siting, Design and Operation for Controlling Damage to Aquatic Organisms" (new standard)
- ANS-18.3.3, "Entrapment/Impingement: Guide to Steam Electric Power Plant Cooling System Siting, Design and Operation for Controlling Damage to Aquatic Organisms at Water Intake Structures" (new standard)
- ANS-18.4, "Aquatic Ecological Surveys Required for Siting, Design, and Operation of Thermal Power Plants" (new standard)
- ANS-18.6, "Discharge of Thermal Effluents into Surface Waters" (new standard)
- ANS-18.7, "Control and Monitoring of the Discharge of Chemicals" (new standard)

PINS in Development (2)

- ANS-2.10, "Criteria for the Handling and Initial Evaluation of Records from Nuclear Power Plant Seismic Instrumentation" (reinvigoration of historical standard ANSI/ANS-2.10-2003))
- ANS-2.18, "Standards for Evaluating Radionuclide Transport in Surface Water for Nuclear Power Sites," (new standard)

PINS in Approval (2)

- ANS-2.23, "Nuclear Plant Response to an Earthquake" (revision of ANSI/ANS-2.23-2002 (R2009))
- ANS-2.32, "Guidance on the Selection and Evaluation of Remediation Methods for Subsurface Contamination" (new standard)

Standards in Development – Approved PINS (8)

- ANS-2.2, "Earthquake Instrumentation Criteria for Nuclear Power Plants" (reinvigoration of historical standard ANSI/ANS-2.2-2002)
- ANS-2.8, "Determine External Flood Hazards for Nuclear Facilities" (reinvigoration of historical standard ANSI/ANS-2.8-1992)

[1] ANS-2.27 & ASCE 43-05 supersede ANS-2.11.

- ANS-2.9, “Evaluation of Ground Water Supply for Nuclear Facilities” (reinvigoration of historical standard ANSI/ANS-2.9-1980 (R1989))
- ANS-2.16, “Criteria for Modeling Design-Basis Accidental Releases from Nuclear Facilities” (new standard)
- ANS-2.30, “Assessing Capability for Surface Faulting at Nuclear Facilities” (new standard)
- ANS-2.31, “Estimating Extreme Precipitation at Nuclear Facility Sites” (new standard)
- ANS-3.8.10, “Criteria for Modeling Real-time Accidental Release Consequences at Nuclear Facilities” (new standard)
- ANS-3.11, “Determining Meteorological Information at Nuclear Facilities” (revision of ANSI/ANS-3.11-2005 (R2010))

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

- ANSI/ANS-2.27-2008, “Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments”
- ANSI/ANS-2.29-2008, “Probabilistic Seismic Hazard Analysis”
- ANSI/ANS-16.1-2003 (R2008), “Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure”

Responses to Inquiries in Development (0)

No inquiries received.

Future Plans

Focus efforts on completing standards projects and reaffirming or revising active standards that support nuclear utilities meeting NTTF requirements and DOE nuclear safety orders, guides, standards, and handbooks. These include:

- ANS-2.2, “Earthquake Instrumentation Criteria for Nuclear Power Plants” (reinvigoration of historical standard ANSI/ANS-2.2-2002)
- ANS-2.8, “Determine External Flood Hazards for Nuclear Facilities” (reinvigoration of historical standard ANSI/ANS-2.8-1992)
- ANS-2.10, “Criteria for the Handling and Initial Evaluation of Records from Nuclear Power Plant Seismic Instrumentation” (reinvigoration of historical standard ANSI/ANS-2.10-2003))
- ANS-2.23, “Nuclear Plant Response to an Earthquake” (revision of ANSI/ANS-2.23-2002 (R2009))
- ANSI/ANS-2.27-2008, “Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments”
- ANSI/ANS-2.29-2008, “Probabilistic Seismic Hazard Analysis”
- ANS-2.30, “Assessing Capability for Surface Faulting at Nuclear Facilities” (new standard)
- ANS-2.31, “Estimating Extreme Precipitation at Nuclear Facility Sites” (new standard)

Fuel, Waste, & Decommissioning (FWD) Consensus Committee
Chairman's Report to the Standards Board
June 17, 2014, Meeting ● Reno, Nevada

PINS in Development (4)

- ANS-40.35, "Volume Reduction of Low-Level Radioactive Waste or Mixed Waste "(reinvigoration of historical standard ANSI/ANS-40.35-1991)
- ANS-55.1, "Solid Radioactive Waste Processing Systems for Light Water Reactor Plants" (revision of ANSI/ANS-55.1-1992 (R2009))
- ANS-55.4, "Gaseous Radioactive Waste Processing Systems for Light Water Reactor Plants" (revision of ANSI/ANS-55.4-1992 (R2007))
- ANS-55.6, " Liquid Radioactive Waste Processing System for Light Water Reactor Plants" (revision of ANSI/ANS-55.6-1992 (R2007))

Standards in Development – Approved PINS (2)

- ANS-57.2, "Design Requirements for Light Water Reactor Spent Fuel Facilities at Nuclear Power Plants" (reinvigoration of historical standard ANSI/ANS-57.2-1983)
- ANS-57.3, "Design Requirements for New Fuel Storage Facilities at LWR Plants" (reinvigoration of historical withdrawn standard)

Delinquent Standards (5+ years since ANSI approval)(7)

- ANSI/ANS-55.1-1992 (R2009), "Solid Radioactive Waste Processing Systems for Light Water Reactor Plants" (revision to be initiated)
- ANSI/ANS-57.1-1992 (R2005), "Design Requirements for Light Water Reactor" (chair/members needed)
- ANSI/ANS-57.5-1996 (R2006), "Light Water Reactors Fuel Assembly Mechanical Design and Evaluation" (chair/members needed)
- ANSI/ANS-57.8-1995 (R2006), "Fuel Assembly Identification" (chair/members needed)
- ANSI/ANS-57.10-1996 (R2006), "Design Criteria for Consolidation of LWR Spent Fuel (chair/members needed)
- ANSI/ANS-55.4-1992 (R2007), "Gaseous Radioactive Waste Processing Systems for Light Water Reactor Plants" (revision to be initiated)
- ANSI/ANS-55.6-1993 (R2007), "Liquid Radioactive Waste Processing System for Light Water Reactor Plants" (revision to be initiated)

Responses to Inquiries in Development (0)

The committee has not received any inquiries on standards.

Future Plans

- Near term (3 months)
  - ✓ Assign Secretary for the FWDCC by 8/1/14 or sooner
  - ✓ Complete assignments of Subcommittee (SC) Chairs and Vice chairs for each FWD SC by 9/1/14
  - ✓ Obtain consensus from FWDCC members on the number and title of each SC by 8/15/13
- Long Term (6 months)
  - ✓ Evaluate the need for developing a new and updated standard for those inactive fuel, waste, and decommissioning standards by 10/31/14
  - ✓ Determine new areas where standards are needed for fuel, waste, and decommissioning by 11/10/14

- ✓ Subcommittee (SC) Chairs and Vice chairs for each FWD SC to provide initial action plans moving forward for each identified standard within that SC by 12/31/14.

Report to the Standards Board from the External Communications Task Group (ECTG). June 2014

Members: Herb Massie, Tina Taylor, Ed Wallace

- The ECTG held a telecon on May 27, 2014. Questions arose regarding the charter of this TG.
- The proposed charter is as follows:

"The primary purpose of the External Communications Task Group (ECTG) is to improve the links between ANS, other US SDOs, users (e.g., utilities, nuclear designers, architect engineers, universities, national laboratories, and fuel fabricators), national regulators, and eventually international SDOs."

- The ECTG will request through the SB that other SDOs send brief status reports to the SB about twice of year.
- EPRI has someone on the NESCC that Tina Taylor will coordinate with.
- Attached is the latest liaison table between the SB and other SDO and other related organizations. The ECTG will draft a letter for Don Spellman's signature to send to liaisons not on the SB.