# Survey Recommendations - TOP 10 Standards

A standards priority survey was issued in July 2015 as a means of gaining industry input, the results of which are being used in determining priorities for the American Nuclear Society (ANS) Standards Committee. The survey included 27 topical areas set by the ANS Standards Board representing revisions to current standards, reinvigorations of historical standards, and potential new topical areas of work. The top ten topical areas considered "high priority" by the highest percentage respondents are shown in the below table. The status of implementation of each item is provided as well as the standards chair to contact should you have any further questions or would like to participate in the associated standards effort are provided.

| Rank | Title or Topical Area (No.) | Assigned Consensus Committee and Response |
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| #1 | Criteria for Severe Accident Evaluation (ANS-58.15) | Assigned Consensus Committee: Safety and Radiological Analyses Consensus Committee<br><br>Status: A standard for advanced reactors on severe accident evaluation is needed. It is under evaluation by the consensus committee. The standard may need further design development.<br><br>Please contact the ANS Standards Manager at standards@ans.org if you would like additional information on this topic. |
| #2 | Design Criteria for Safe Shutdown Following Selected Design Basis Events in Light Water Reactors (ANS-58.11) | Assigned Consensus Committee: Large Light Water Reactor Consensus Committee<br><br>Status: There was an existing standard (ANS-58.11) that addressed this issue. It was last issued in 2002 but was withdrawn in 2012 and became historical at that point. A task group has been formed to evaluate a path forward.<br><br>Please contact the ANS Standards Manager at standards@ans.org if you would like additional information or would like to participate in this effort. |
| #3 | Risk-Informed and Performance-Based Nuclear Power Plant Design Process (ANS-30.1) | Assigned Consensus Committee: Research and Advanced Reactors Consensus Committee<br><br>Status: This standard is a priority of the ANS Standards Committee. A Risk-informed, Performance-based Principles and Policy Committee (RP3C) has been formed to coordinate the introduction of risk-informed and performance-based approaches into ANS standards. Several standards are already under development. An initial draft of ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Nuclear Safety Designs," has been completed. A new related standard, ANS-30.2, "Categorization and Classification of Structures, Systems, and Components for New Nuclear Power Plants," has been initiated. The ANS-30.2 Working Group has been formed and the scope of the standard developed. Work has started on creating the first draft. Separate standards addressing plant types will be issued or updated in the future to implement the requirements of these two standards. In addition, as any existing ANS standard is revised or new standard started, the associated working groups will coordinates with the RP3C.<br><br>Please contact the ANS Standards Manager at standards@ans.org if you would like additional information or would like to participate in any of these efforts. |

# Survey Recommendations - TOP 10 Standards

| Rank | Title or Topical Area (No.) | Assigned Consensus Committee and Response |
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| #4 | Post-Accident Monitoring (ANS-TBD) | Assigned Consensus Committee: Large Light Water Reactor Consensus Committee<br><br>Status: A standard on post-accident monitoring for advanced reactors would be of value. One approach would be to develop a design independent standard that provides general criteria and requirements applicable to any type of reactor plant. This would be followed by providing detailed requirements in reactor design specific standards.<br><br>Please contact the ANS Standards Manager at standards@ans.org if you would like additional information. |
| #5 | Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications (ASME/ANS RA-S) | Assigned to the ANS/ASME Joint Committee on Nuclear Risk Management:<br><br>Status: ASME/ANS RA-S-2008, "Standard for Level 1 / Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," was issued in 2008 with Addenda A issued in 2009 and Addenda B issued in 2013.<br><br>Status: A full revision is planned for issue in 2017. This new edition will contain many substantive changes based on feedback from recent users of the standard,<br><br>Please contact the ANS Standards Manager at standards@ans.org if you would like additional information. |
| #6 | Design Requirements for Light Water Reactor Spent Fuel Facilities at Nuclear Power Plants (ANS-57.2) | Assigned to the Fuel, Waste, and Decommissioning Consensus Committee<br><br>Status: ANS-57.3, "Design Requirements for New Fuel Storage Facilities at Light Water Reactor Plants," was withdrawn in 1993 and considered a historical standard. A draft was completed and submitted to the consensus committee for ballot. A number of significant comments have been received that will need to be addressed. Work on a revision of ANS-57.2, "Design Requirements for Light Water Reactor Spent Fuel Storage Facilities at Nuclear Power Plants," will be started after the working group completes ANS-57.3.<br><br>Please contact the ANS Standards Manager at standards@ans.org if you would like additional information. |
| #7 | Containment Hydrogen Control (ANS-56.1) | Assigned Consensus Committee: Large Light Water Reactor Consensus Committee<br><br>Status: A task group has been formed to evaluate a path forward. Preliminary interest has been found with a few individuals agreeing to support this effort as a working group member. The project needs a working group chair to be initiated.<br><br>Please contact the ANS Standards Manager at standards@ans.org if you would like additional information or would like to be a member of this working group for this effort. |

# Survey Recommendations - TOP 10 Standards

| Rank | Title or Topical Area (No.) | Assigned Consensus Committee and Response |
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| #8 | Properties of Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness at Nuclear Facilities (ANS-3.8.7) | Assigned Consensus Committee: Large Light Water Reactor Consensus Committee<br><br>Status: There was an existing standard on this topic which was withdrawn in 2008 and now considered a historical standard (ANSI/ANS-3.8.7-1998;W2008, "Criteria for Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness"). An effort is underway to develop a revision of the historical standard. A first draft has been developed and is currently being reviewed. Comments from this preliminary review will likely need to be incorporated. Once the draft of ANS-3.8.7 has been completed, an assessment will be made on the need for additional emergency preparedness standards such as ANS-3.8.3, "Properties of Radiological Emergency Response Plans and Implementing Procedures and Maintaining Emergency Response Capability for Nuclear Facilities."<br><br>Please contact the ANS Standards Manager at standards@ans.org if you would like additional information or would like to participate in this effort. |
| #9 | Properties of Radiological Emergency Response Plans and Implementing Procedures and Maintaining Emergency Response Capability for Nuclear Facilities (ANS-3.8.3) | Assigned Consensus Committee: Large Light Water Reactor Consensus Committee<br><br>Status: Project on hold until completion of ANS-3.8.7 (see above). |
| #10 | Determining Design Basis Flooding at Power Reactor Sites (ANS-2.8) | Assigned Consensus Committee: Environmental and Siting Consensus Committee<br><br>Status: ANS-2.8, "Determining Design Basis Flooding at Power Reactor Sites," was withdrawn in 2002 and considered a historical standard. An effort has been underway to develop a revision of the historical standard for several years. A draft was completed and issued for ballot in June of 2016. The working group is addressing committee comments.<br><br>Please contact the ANS Standards Manager at standards@ans.org if you would like additional information. |

# American Nuclear Society (ANS) Standards Survey Comments Resolutions

The ANS Standards Committee has reviewed each of the comments received from the 2015 ANS Standards Survey. Comments were assigned to the appropriate ANS standards committee or individual to evaluate and develop a response. The comments and responses are listed below. They are being distributed to all survey responders. Should you like additional information regarding the comment response please notify the ANS Standards Manager at standards@ans.org.

| ITEM | ACTION REQUIRED | ASSIGNED TO | RESPONSE |
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| **Standards Survey or Topical Areas Noted of Importance** | | | |
| 1. I expect new reactors and national labs will have competing priorities. Ensure the existing fleet's needs are met given the increased regulatory requirements. | Develop response and request identification of standards needed. | S. Stamm | Actually we recognized that the national labs will have a wide range of priorities. We considered this when we reorganized the ANS Standards Committee into eight consensus committees separating large light water reactors (existing fleet), advanced reactor and research reactors, and nonreactor nuclear facilities into different consensus committees. Each of these consensus committees develops their own priorities and is responsible for the production of standards needed in their areas. One purpose of this survey was to get industry input on the specific areas when standards need to be improved and/or developed. We are in the process of implementing that feedback. |
| 2. Emergency planning standards need to be reviewed in the context of lessons learned, admitted or not, by the federal agencies during Fukushima. The National Response Framework (NRF) was not followed. | Provide plan for ER standards | R. Markovich | ANS will be reviewing its emergency planning standards to incorporate lessons learned from the Fukushima event as well as the NRF and other industry experience. |
| 3. Safety analysis, such as criticality control, is crucial for nuclear safety as it dominates whether the reactivity of the reactor will continually go up or go down. | Address how this is or will be addressed in standards. | Reassigned from R. Busch to … G. Flanagan & G. Carpenter | ANS already has a historical standard that addresses shutdown of a reactor--ANSI/ANS-58.11-1995 (R2002) "Design Criteria for Safe Shutdown Following Selected Design Basis Events in Light Water Reactors." It is under consideration for revision. We are awaiting that decision before moving forward.<br>---<br>Nuclear criticality safety for the handling of materials outside reactors is covered by a separate set of nuclear criticality safety standards. These nuclear criticality safety standards do not cover any of the issues associated with reactor safety, but do address the safe handling of fissionable materials outside of reactors. |
| 4. ANSI/ANS-ANS-58.2-1988 (W1998), "Design Basis for Protection of Light Water Nuclear Power Plants Against the Effects of Postulated Pipe Rupture," Two-Phase Jet Model has been rejected by members of the Advisory | Address the need for a revision to 58.2 based on this comment | C.E. Carpenter | ANS will be reconstituting a working group to update this standard in the near future. Please contact the ANS Standards Manager if you would like to participate in this effort at standards@ans.org. |

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| Committee on Reactor Safeguards, so further updating that standard would be beneficial to the industry, especially in attempts to close out General Safety Issue (GSI)-191, "Experimental Studies of Loss-of-Coolant-Accident-Generated Debris Accumulation and Head Loss with Emphasis on the Effects of Calcium Silicate Insulation" (NUREG/CR-6874, LA-UR-04-1227). | | | |
| 5. Consider a new ANS standard on applications of general design criteria for advanced nuclear power plants. | Provide scope of ANS 30.1 | M. Linn | A new standard ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Nuclear Safety Designs," is being developed that is technology-neutral and specifies objectives for the consistent use of risk-informed and performance-based techniques in augmenting nuclear safety of new nuclear plant designs. As a technology-neutral standard, ANS-30.1 will provide a guiding framework for other technology-specific standards, as needed. |
| 6. Consider development of an industry standard for a corrective action program to satisfy ANSI/ASME N45.2, "Quality Assurance Program Requirements for Nuclear Facilities," and 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants." No standard exists and, thus, the U.S. Nuclear Regulatory Commission (NRC) makes its inspection practices based on opinion. The Institute of Nuclear Power Operations (INPO) has not created a standard and Nuclear Energy Institute (NEI) is intelligent enough not to get involved. This could dove-tail with an Institute of Electrical and Electronics Engineer initiative (since at least 2006) to formulate a standard for root cause analysis. | Evaluate if consideration of a new standard is warranted and provide recommendation to the Large Light Water Reactor Consensus Committee. | C. Moseley | ANSI N45.2 documents were first superseded by ASME NQA-1 in 1979 although many utilities are still committed to the N45.2 daughter standards. The NRC Inspection Manual has a procedure Problem Identification and Resolution (PI&R 71152) that provides guidance for their inspections. NQA-1 - 2008/9 is endorsed by the NRC in RG 1.28. That document describes the basic tenets of Corrective Action in Part III guidance. Utilities have pretty much gravitated to their own causal analysis protocols. The DOE community by and large has coalesced around Tap Root for their Causal Analysis protocols. That has happened for a number of reasons but primarily because Tap Root results dovetail into categories for the DOE Occurrence Reporting System. Bottom Line…There is doubtful use for a new standard in this area because the NRC and DOE users already have systems in place. |
| 7. The extension of simulation technology from training into engineering design validation and analysis is seriously overdue. | Evaluate request and provide recommendation. | P. Guha | ANS-3.5, "Nuclear Power Plant Simulators for Use in Operator Training and Examination," establishes the functional requirements for full-scope nuclear power plant control room simulators.<br>I'll be surprised if the utilities are not using the simulator for design verifications, such as for operators' action (SAC) for any design modifications or changes. |

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| | | | If the simulator is used for design verification purpose, we must ensure that the changes to the simulator do not compromise the integrity of the simulator for training purpose.<br><br>This is an interesting application. The commenter is requested to contact the ANS Standards Manager at standards@ans.org to connect you with the responsible subcommittee chair to discuss this further. |
| 8. Standards for licensing new plant designs starting with test facilities and low power test reactors for power ramp up and testing standards for fuel processing and recycling | Provide response | S. Stamm | The ANS Standards Committee is actively working on several standards for new plant designs. We received a significant number of comments related to development of new plant design standards and are giving those areas priority. ANSI/ANS-53.1-2011, "Nuclear Safety Design Process for Modular Helium-Cooled Reactor Plants," was issued in 2011 and is available for purchase via the ANS website. Work has started on a new standard, ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Nuclear Safety Designs." Work has also started on another new standard, ANS-30.2, "Categorization and Classification of Structures, Systems, and Components for New Nuclear Power Plants," and on ANS-20.2, "Nuclear Safety Design Criteria and Functional Performance Requirements for Liquid-Fuel Molten Salt Reactor Nuclear Power Plants."<br><br>Our Nonreactor Nuclear Facilities Consensus Committee has started work on ANS-57.11, "Integrated Safety Assessments for Nonreactor Nuclear Facilities." The ANS Standards Committee has and continues to focus on standards that are needed by plant designers and operators to help them obtain needed regulatory approvals. Since recycling of spent fuel is not permitted in the U.S., this has not been identified as a near-term, standards target. We continue to need volunteers knowledgeable in the standards efforts identified above. |

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| 9. Future standards efforts should focus on protecting the three fission product barriers and minimizing the release of radioactive material to the environment. The current regulatory and standards structure address items related to this goal, but fission product barrier production should be emphasized. | Evaluate proposal and provide recommendation to Standards Board | P. Kadambi | This comment is right on target and fully consistent with the proposed technical approach that is the technical basis for upcoming Risk-informed, Performance-based Principles and Policy Committee consideration. This approach envisages adoption of the structure of the risk-informed and performance-based Reactor Oversight Program with one of the cornerstones of safety being barrier integrity. On the issue of minimizing release of radioactive material, safety decisions are expected to be based on the principles of integrated decision making that have a record of success in experience. |
| 10. Public communications in the event of fission product barrier failure should also be addressed. | Evaluate proposal and provide recommendation | R. Markovich | Current emergency preparedness guidance (10 CFR 47 and 10 CFR 50, App E) are already addressed for these events. Any loss of fission product barriers results in event classification and implementation JIC operations – which would be a part of the E-Plan. This item would be addressed as part of a revision of ANSI/ANS-3.8.3-1995 (W2005), “Criteria for Radiological Emergency Response Plans and Implementing Procedures,” in consideration. |
| 11. A solid radwaste characterization standard | Evaluate proposal and provide recommendation | D. Eggett | This recommendation is currently being evaluated to determine its merit and priority. A response is targeted by the mid-2017. |
| 12. Standards for modular reactors for siting, emergency preparedness, seismic requirements | Evaluate proposal and provide recommendation | R. Markovich / G. Flanagan | This item and item 16 deal with the same topic. SMRs may have unique issues associated with their power level and other aspects of their design that may warrant a relaxation of some of the requirement in the areas of siting and emergency preparedness and possibly seismic. This information has been raised by NEI in recent communication with the NRC requesting policy decisions in these areas for SMRs. There has been marginal success in that NRC has acknowledged that they may consider such actions once there is an SMR application. ANS intends to initiate work on a standard in this area once some degree of consensus is reached. |
| 13. Nuclear power plant defense-in-depth adequacy | Provide status summary | S. Stamm | The ANS Standards Committee is evaluating this item. Defense-in-depth has been a cornerstone of the nuclear industry’s safety structure. This approach provides an array of safety levels to assure that the probability of any significant accident radiological releases remain exceedingly unlikely. This was needed to deal with the potential uncertainty of being |

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| | | | able to consider all of the possible event sequences that could create significant nuclear consequences. The approach has proven to be effective but not necessarily cost beneficial. It is time for the nuclear industry to reexamine some of the past overly conservative approaches to safety using risk-informed and performance-based approaches to ascertain whether modifications to the deterministic defense-in-depth approach might yield both safety and cost improvements. |
| 14. A standard for root cause analysis at nuclear facilities | Evaluate proposal and provide recommendation | C. Moseley | ANSI N45.2 documents were first superseded by ASME NQA-1 in 1979 although many utilities are still committed to the N45.2 daughter standards. The NRC Inspection Manual has a procedure Problem Identification and Resolution (PI&R 71152) that provides guidance for their inspections. NQA-1 - 2008/9 is endorsed by the NRC in RG 1.28. That document describes the basic tenets of Corrective Action in Part III guidance. Utilities have pretty much gravitated to their own causal analysis protocols. The DOE community by and large has coalesced around Tap Root for their Causal Analysis protocols. That has happened for a number of reasons but primarily because Tap Root results dovetail into categories for the DOE Occurrence Reporting System. Bottom Line…There is doubtful use for a new standard in this area because the NRC and DOE users already have systems in place. |
| 15. Standards related to Chapter 18 of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports For Nuclear Power Plants: LWR Edition," on cybersecurity, integrated procedures, and electronics in control rooms, safe shutdown rooms, design rules for placement of electronic equipment, record keeping for cable routing, and beyond design basis event human actions | Evaluate proposal and provide recommendation | C.E. Carpenter | **Cybersecurity** - ANS has initiated work on a standard in this area.<br>**Integrated procedures** - ANS typically does not address this issue.<br>**Electronics in Control Room** - This topic is in the purview of IEEE.<br>**Safe shutdown rooms** - A working group is being established to revise ANSI/ANS-58.11-1995 (R2002), "Design Criteria for Safe Shutdown Following Selected Design Basis Events in Light Water Reactors," which covers this area.<br>**Design rules for placement of electronic equipment** - This topic is in the purview of IEEE.<br>**Record keeping for cable routing**- This topic is in the purview of IEEE. |

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| | | | **Beyond design basis event human actions** – ANSI/ANS-58.8-1994 (R2008), "Time Response Design Criteria for Safety-Related Operator Action," is in the process of being revised. We will evaluate whether it should address beyond design basis events. |
| 16. Standards for small modular reactors | Provide plan summary | G. Flanagan | See item 12 above. |
| 17. Decommissioning and waste management support activities should be the ANS Standards Committee's highest priority right now. | Provide response. | D. Eggett | The ANS Standard Committee is considering the priority of standards in this area in relation to other industry needs. Groundwork has already begun to determine what industry standards for decommissioning and waste may be needed. Identified topic(s) are targeted by the end of 2016 but NLT the 1st quarter of 2017. |
| 18. A new standard is needed in support of the changes expected for severe accident guidance. | Provide response. | R. Markovich | ANS will be incorporating beyond design bases requirements into it standards (see Item 21). |
| 19. A uniform set of guidelines would benefit the fleet. The new standard could be modeled after the recommendations from the International Atomic Energy Agency (IAEA) on a similar topic. | Evaluate proposal and provide recommendation | R. Markovich | Clarification is requested. What standard(s) is the commenter referring to? What are the perceived inconsistencies? What is the purpose of these new guidelines? The commenter is requested to provide additional information on this to the ANS Standards Manager at standards@ans.org. |
| 20. Any new standards that are created should also look forward to future generations of reactor designs. Concentrating on the current fleets of light water reactors (LWRs) is useful, but the generation of standards for advanced reactor types could aid in the evaluation and approval of advanced reactor types for construction as well as allowing for the decommissioning of older reactor facilities that are unnecessarily prone to failure. | Provide response | S. Stamm | This comment is accurate and that is exactly the direction of the ANS Standards Committee. In general, ANS writes standards for new plants. Existing facilities may apply all or portions of these new plant standards at their option.<br><br>The ANS Standards Committee is actively working on several standards for new plant designs. We received a significant number of comments related to development of new plant design standards and are giving those areas priority. ANSI/ANS-53.1-2011, "Nuclear Safety Design Process for Modular Helium-Cooled Reactor Plants," was issued in 2011 and is available for purchase via the ANS website. Work has started on a new standard, ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Nuclear Safety Designs." Work has also started on to other new standards -- ANS-30.2, "Categorization and Classification of Structures, Systems, and Components for New Nuclear Power Plants," and ANS-20.2, "Nuclear Safety Design Criteria and Functional Performance Requirements for Liquid-Fuel |

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| | | | Molten Salt Reactor Nuclear Power Plants."<br>Our Nonreactor Nuclear Facilities Consensus Committee (NRNFCC) has started work on ANS-57.11, "Integrated Safety Assessments for Nonreactor Nuclear Facilities." The ANS Standards Committee has and continues to focus on standards that are needed by plant designers and operators to help them obtain needed regulatory approvals. Since recycling of spent fuel is not permitted in the U.S., this has not been identified as a near-term, standards target. We continue to need volunteers knowledgeable in the standards efforts identified above. |
| 21. I do think it is helpful for ANS to duplicate the efforts of NRC, NEI, and INPO in the emergency preparedness and response area. | Provide response | R. Markovich | NEI and INPO do not produce and maintain American National Standards such as those produced by ANS. ANS interfaces with NEI and INPO to coordinate the work on common issues. ANS intends to revise its emergency preparedness standards to incorporate lessons learned. Work has already begun on a revision of ANSI/ANS-3.8.7-1998 (W2008), "Criteria for Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness." Once completed, the need for additional emergency preparedness standards will be evaluated and initiated accordingly. |
| 22. There is nothing about accident-tolerant fuels. At this moment, most of the nuclear industry thinks of zirconium alloy only as cladding material for fuel. This concept should be more open and include other material such as ferritic iron-chromium-aluminum (FeCrAl) steels and silicon carbide, among others. | Evaluate proposal and provide recommendation | D. Eggett | This topic will be discussed with a fuel vendor, e.g., Westinghouse, to evaluate the recommendation. |
| 23. There should be more emphasis on developing advanced safety systems for LWRs. | Provide response | C.E. Carpenter | The ANS Standards Committee is actively working on several standards for new plant designs. We received a significant number of comments related to development of new plant design standards and are giving those areas priority. Work has started on a new standard, ANS-30.1, "Integrating Risk and Performance Objectives into New Reactor Nuclear Safety Designs." Work has also started on another new standard, ANS-30.2, "Categorization and Classification of Structures, Systems, and Components for New Nuclear Power Plants." Once these are issued, we will start working on specific reactor design and system standards. |

# American Nuclear Society (ANS) Standards Survey Comments Resolutions

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| 24. Emergency response during general catastrophe/when infrastructure is degraded | Evaluate proposal and provide recommendation | R. Markovich | The next revision of our emergency preparedness standards will address considerations for degraded infrastructure. |
| 25. Cybersecurity, export control [both NRC and U.S. Department of Energy (DOE) regulation], advanced reactor accident criteria | Provide response | S. Stamm | Standards are currently under development in both of these areas. |
| 26. General design guidance from ANS, especially safety class codes and standards, are helpful. | Provide response | D. Spellman | This is part of an ongoing dialog between the ANS-30.1 and ANS-30.2 working groups and the members of the ANS Risk-informed, Performance-based Principles and Policy Committee to develop a top-down hierarchy for design of advanced reactors. |
| 27. I believe the three most important areas in nuclear right now and for the near-term are 1) onsite spent fuel storage facilities (existing), 2) onsite spent fuel storage facilities (new), and 3) nuclear power plant decommissioning process, as these several areas are sure to be used heavily over the next 10-20 years. | Provide response | D. Eggett | ANS-57.2 for existing onsite spent fuel storage facilities and ANS-57.3 for new onsite spent fuel storage facilities are currently being developed. ANS-57.3 is targeted for approval by mid-2017 with ANS-57.2 by the end of 2017. See previous response above for addressing nuclear power plant decommissioning process and current ongoing efforts. |
| 28. An ANS standard for the evaluation of new fuel designs included in the current DOE Accident Tolerant Fuel (ATF) Program would be very useful. From my perspective as a researcher studying the irradiation performance of ATF concepts, a recommended set of performance data would be a useful tool to design experiments against. | Evaluate proposal and provide recommendation | D. Eggett | See previous response above related to evaluating accident-tolerant fuels. |
| 29. A consensus standard for disposability of dry storage canisters for spent fuel would be an important step toward disposition of the existing inventory of dual purpose canisters and could give operators a choice for disposability when buying dry storage systems. | Evaluate proposal and provide recommendation | D. Eggett | This recommendation will be discussed with the Fuel, Waste, and Decommissioning Consensus Committee and the ANS Fuel and Waste Professional Division to determine if this option has ever been given consideration and if so, what was its disposition. An evaluation is targeted for completion in the 1st quarter of 2017. |
| 30. Standards on nonproliferation, safeguards, or safeguards by design | Evaluate proposal and provide recommendation | C.E. Carpenter<br>J. O'Brien | ANS does not typically write standards on these areas. The chair of our Nonreactor Nuclear Facilities Consensus Committee is in discussion with the applicable DOE branch to determine need. |
| 31. **Miscellaneous suggestions** | | | |
| 32. ANS should educate members on how standards ultimately impact regulations and the "business of nuclear." There is very little understanding in my opinion of how changes to standards impact the economics of operating nuclear plants. | Provide response | D. Spellman | A series of presentations have been developed covering all aspects of the ANS standards work. These presentations are being given online to members of the ANS Standards Committee. One presentation, just developed, is focused on providing |

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| | | | an overview to non-standards members of ANS and to external audiences. An ANS announcement will be made to roll out this presentation. |
| 33. Clarify (or remind) survey-takers of the purpose of ANS standards and how they're used in industry and regulation. | Provide response | D. Spellman | We will provide that information to the survey respondents when we distribute these responses to the survey comments. When the standards overview presentation is complete, we will invite all of the survey respondents to participate in the online discussion of this presentation. In addition, ANS will distribute a brochure that it has developed to survey respondents that addresses this issue. |
| 34. Develop a strategic plan for integrating ANS standards initiatives and NEI initiatives. | Provide response | S. Stamm | AN ANS Standards Committee Strategic Plan was just issued (available here). The Strategic Plan has been adjusted to address the comments from this review. We have had several discussions with NEI regarding the use of consensus standards to augment previous NEI efforts and the improvement of coordination on current NEI efforts. Several past NEI efforts have been identified for consideration as topics for standards. |
| 35. **Complaints** | | | |
| 36. We should not charge for standards. Electronic versions should be available for download at no charge. | Provide response | S. Stamm | The ANS expends considerable resources in the support of standards development and the publication of our standards. It is absolutely essential that the Society be fully reimbursed for their costs in order to guarantee their continued support. More and more of our standards sales is electronic. Without the revenue from sales of these standards, the Society would be unable to continue to support this effort. |
| 37. There needs to be a way for standards to have a greater weight with the NRC. | Provide response | S. Stamm | Consensus standards do carry a significant amount of weight with the NRC already. The chair of the Standards Board alerts NRC staff for each issued standard with a request to consider endorsing the standard. The NRC is bound to consider industry standards as preferable to creating their own guidelines in accordance with OMB Circular No. A-119, “Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities.” That being said, please forward any specific recommendations for improving this interface. |
| 38. ANS should offer standards at no cost as a public download. | Provide response | S. Stamm | The ANS expends considerable resources in the support of standards development and the publication of our standards. It is absolutely essential that the Society be fully reimbursed for their costs in order to |

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| | | | guarantee their continued support. More and more of our standards sales are electronic. Without the revenue from sales of these standards the Society would be unable to continue to support the ANS standards program. |
| 39. Some of the ANS standards are outdated so NRC cannot reference them in guidance documents. | Provide response | S. Stamm | Please see the response to item 40. |
| 40. Effort should be made to help keep these standards up to date as much as possible. | Provide response | S. Stamm | ANS standards are at a minimum reviewed every five years to determine if a revision is needed. At that time, we have the options of reaffirming the standard as is, if it is still acceptable; revising it, or withdrawing it if no longer needed. A withdrawn standard is not necessarily unacceptable and is still available as the basis for the design of existing plants. Prior to 2013, a number of standards had been withdrawn because they had not been maintained within the 10 year maximum period allowed by the American National Standards Institute (ANSI) – the organization that accredits most standards development organizations.<br><br>We reorganized the ANS Standards Committee in 2013 to break up large consensus committees into eight, more manageable consensus committees. This has allowed us to apply better management focus on our standards. The first goal was to prevent more standards from being withdrawn if they were still useful. We have also emphasized evaluation of those that had been previously withdrawn to revise and reissue those that were still needed. |
| 41. Spending ANS resources on developing new U.S. reactor design criteria right now is like tossing the money and resources away. It makes no sense whatsoever. Such thinking is outdated and completely oblivious to the current reality that there will be no U.S. reactor orders for decades. | Provide response | S. Stamm | While your timeline may be valid, it does not mean that standards would not make a difference in the success of new technologies. A standard is a way to specify an industry preferred approach for new plants. Without a standard, each company is on their own. In order for new technologies to be successful, plant costs will have to be competitive. One of the most important things a standard could achieve is to develop design requirements that could result in more reasonable plant costs. |