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# Report on ANS/NRC Advanced Non-Light Water Reactor Standards Workshop

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# Advanced Reactor Standards Workshop

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



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# Advanced Reactor Standards Workshop

- A summary report has been issued with numerous actions to move the process forward
- At the workshop we committed to discussing the outcomes at this NRC Standards Forum
- The workshop was organized into technology based working groups
  - High Temperature Reactor Technology
  - Molten Salt Reactor Technology
  - Fast Reactor Technology
- There were presentation by each working group regarding the standards needs in each technical area
- The advanced reactor standards needs were discussed further in facilitated breakout sessions
- The breakout sessions reported back
  - Specific needs and
  - Cross-cutting needs



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# Advanced Reactor Standards Workshop Outcomes

- One general outcome was an agreement that although there could be significant improvements current standards are sufficient for both licensing and design of advanced reactors
- There was general agreement that when possible standards for advanced reactors should be risk informed and performance based
- There were a number of specific standards called out for priority development or update
- There were also a number of standards that were identified as important to several different areas. These include
  - ASME quality assurance standards
  - ANS categorization and classification standards
  - ASME/ANS Probabilistic Risk Assessment standards
  - Need for high temperature material standards (ASTM, ASME)
- There was agreement that more effort should be taken to better coordinate and in some cases integrate standards developed by the various SDOs



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## Examples of SDO Follow-up from the Workshop (ANS)

- ANS was asked to follow up on the following standards and standards projects to insure their usefulness and availability to advanced reactors:
  - ANS-30.1-201x, “Integration of Risk-Informed, Performance-Based Principles and Methods into Nuclear Safety Design for Nuclear Power Plants” (new standard in development)
  - ANS-30.2-201x, “Categorization and Classification of Structures, Systems, and Components for New Nuclear Power Plants” (new standard in development)
  - ANSI/ANS-53.1-2011 (R2016), “Nuclear Safety Design Process for Modular Helium-Cooled Reactor Plants”



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# Examples of SDO Follow-up from the Workshop (ASME)

- ASME was asked to follow up on the following standards and standards projects to insure their usefulness and availability to advanced reactors:
  - ASME NQA-1-2017, “Quality Assurance Requirements for Nuclear Facilities Applications”
  - ASME O&M, “Operation and Maintenance of Nuclear Power Plant Code”
  - ASME BPV SECTION III Div.5
  - ASME BPV SECTION IX



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# QUESTIONS?

