ARCSC Advanced Reactor Codes and Standards Collaborative

4th Annual Advanced Reactor Codes and Standards Collaborative Workshop

DATE: Thursday, December 4, 2025
TIME: 9:00 a.m. to 5:00 p.m. EASTERN
PLATFORM: Hybrid (In-Person and Virtual)
PLACE: Electric Power Research Institute
1325 G. Street NW
Washington, DC 20005

FINAL FOR POSTING ONLINE v3

Session Time	Session Title	Session Presenter(s)
8:00 – 9:00 a.m.	**In-Person Arrival and Check-In**	
9:00 – 9:05 a.m.	**Welcome and In-Person Logistics** - Video	➢ Andrew Sowder, EPRI, ANS Standards Board Chair
9:05 – 9:10 a.m.	**Review of Agenda and Workshop Purpose** - Video	➢ Andrew Sowder, EPRI, ANS Standards Board Chair
9:10 – 9:25 a.m.	**Progress to Date, Future Actions Advanced Reactor Codes and Standards Collaborative (ARCSC)** - Video	➢ Don Eggett, ANS, ARCSC Co-Chair
9:25 – 10:00 a.m.	**EPRI/NEI North American Advanced Reactor Roadmap (NAARR) Rev. 1 Part 1: Technical Readiness – SUPPLY CHAIN** - Video *See page 3 of this agenda*	➢ Don Eggett, ANS, ARCSC Co-Chair ➢ Mark Richter, NEI, Director
10:00 – 10:30 a.m.	**NRC Activities in Codes & Standards** - Video	➢ Raj Iyengar, Ph.D., NRC Chief, Reactor Engineering Branch Division of Engineering Office of Nuclear Regulatory Research
BREAK 10:30–10:45 a.m.		
10:45–12:00 p.m.	**Designer Feedback** The Role of RIPB Codes & Standards in Regulatory Modernization…and Reestablishing the U.S. as the Global Leader in Nuclear Energy - Video	➢ Rani Franovich, Deep Fission

Agenda subject to change.

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LUNCH 12:00 – 12:45 p.m.		
12:45 – 2:15 p.m.	**Guided Discussion:** Risk-Informed, Performance-Based Industry Needs	
	RIPB Guidance for Designers and Standards Setters - Video	➢ N. Prasad Kadambi, RIPB TG Chair ➢ Jon Facemire, NEI
	ASME Section III - Recent Activities and Alternate Requirements for Items Commensurate with their Contribution to Safety or Risk - Video	➢ Rachel Romano, Secretary, TG on Alternate Requirements
	American Nuclear Society (ANS) Standard 2.26 - Categorization of Nuclear Facility Structures, Systems, and Components for Seismic Design - Video	➢ Doug Clark, Oak Ridge National Laboratory (ORNL) and ANS 2.26 Chair
BREAK 2:15 – 2:30 p.m.		
2:30 – 3:30 p.m.	**Guided Discussion:** RIPB Design and Opportunities for Right-Sizing Regulatory Requirements for Civil Structures - Video	
	Part 1: RIPB Seismic Design of Nuclear Civil Structures - Video	➢ Brian McDonald, Ph.D., S.E., Principal Engineer and Corporate Vice President, Exponent; Chair, ASCE DANS Committee
	Part 2: Right Sizing Requirements for Nuclear Civil - Video Structures	➢ Andrew Whittaker, Ph.D., S.E., SUNY Distinguished Professor, University at Buffalo; Chair, ASCE Nuclear Standards Committee
3:30 – 3:45 p.m.	**EPRI/NEI North American Advanced Reactor Roadmap (NAARR) Rev. 1 Part 2: Technical Readiness – CODES & STANDARDS** - Video *See page 4 of this agenda*	➢ Don Eggett, ANS, ARCSC Co-Chair ➢ Mark Richter, NEI, Director
3:45 – 4:35 p.m.	**Guided Discussion:** Incorporating artificial intelligence (AI) into work/applications; how to approach and controls needed for AI Introduction Video	
	Nuclear Industry Virtual Assistant (NIVA) Pilot Project - Video	➢ Jim Slider, NEI
	Incorporating Artificial Intelligence (AI) Into Work/Applications; How to Approach And Controls Needed for AI - Video	➢ Todd Anselmi, INL
4:35 – 5:00 p.m.	**Wrap up and Follow-up Actions** - Video Facilitators: Don Eggett, Andrew Sowder, Mark Richter	➢ All participants
5:00 p.m.	**Adjournment**	➢ Don Eggett, ANS, ARCSC Co-Chair

Agenda subject to change.

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EPRI/NEI North American Advanced Reactor Roadmap (NAARR) Rev. 1 **PART 1**

- Discussion on changes to the NAARR Rev. 1 report, in general
  The Roadmap is available at EPRI-NEI_NAARR_Sept_2025.PDF.

- Summary of new action items from NAARR Rev. 1 for SDOs/ARCSC

  Technical Readiness – SUPPLY CHAIN

  ACTION Priority 2 (p. 55): Commercialize advanced manufacturing capabilities.

  - Document current domestic/regional capabilities and projected demand. Identify gaps and develop plans to close said gaps for strategic advanced manufacturing technologies that address other manufacturing gaps. Include documentation of successful models or approaches to inform moving these technologies from development to commercialization.
  - Provide proof-of-concept research and prototype demonstrations for strategic and high manufacturing and technology level readiness techniques.
  - Expedite qualification of strategic techniques and materials in C&S and regulatory bodies based on deployment timeline and
    demand.
  - Connect designers, developers, original equipment manufacturers, and advanced manufacturers through workshops and industry events to tie demand with capabilities.

  Action Owner: EPRI, OCNI, CAMiNA, DOE, AMMT, ARCSC, CSA, NEI

  Need Date: 2023–2030

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Technical Readiness – CODES & STANDARDS **PART 2**

ACTION Priority 1 (p. 59): Identify gaps in and timelines for advanced reactor C&S.

- Consolidate and update prior advanced reactor C&S gap analyses
- Define development timelines for commercial relevance
- Prioritize gaps and associated actions
- Secure resources, manpower, and funding to address gaps in and timelines for advanced reactor C&S development

Action Owner: SDOs, NEI, CNA, CSA, EPRI, INPO, and advanced reactor vendors

Need Date: 2024 gap identified (complete), 2025 for timeline and assigned resources

Progress to Date on Addressing Key Issue: ARCSC was established. This collaboration will ensure coordination and engagement among Standards Development Organizations (SDOs), reactor designers, regulators, and other interested stakeholders to develop a roadmap of needs for new or updated codes and standards, to record which SDO is undertaking specific activities, and to track the progress of new and revised standards development. Through a gap analysis exercise performed in 2023 and 2024, industry standards of significance were identified. Those standards with the highest-ranking priority were identified and validated by the advanced reactor designers for concurrence. ARCSC is in the process of listing those standards in need of the highest priority for both manpower and funding.

ACTION Priority 2 (p. 60): Demonstrate RIPB classification approaches: Develop and execute at least one pilot project that applies RIPB methods in development of a new advanced reactor standard jointly with U.S. and Canadian SDOs.

Action Owner: American Nuclear Society (ANS), ASME, and CSA with NEI, CNA and advanced reactor vendors

Need Date: 2025

ACTION Priority 1 (p. 60): Update or develop C&S to support RIPB approaches: Update existing C&S to incorporate the benefits of RIPB approaches. These updates should account for pressure boundaries and reactor buildings that no longer perform safety-related fission product retention functions, electrical and instrumentation and control (I&C) equipment that no longer must design to the single failure criterion, a general move from prescriptive requirements to performance-based targets and methods for achieving those targets, and an emphasis on reliability goals instead of deterministic requirements. If necessary, create new C&S to facilitate more efficient C&S development.

Action Owner: NEI, ASME, ANS, American Society of Civil Engineers, SDOs, and advanced reactor vendors

Need Date: 2025

Progress to Date on Addressing Key Issue: Relationships and regular engagement among potential collaborators have been established under the ARCSC SDO collaborative umbrella.