ANS®
CALL FOR PAPERS

Advanced Reactor Safety (ARS 2026)

November 15-18, 2026 | Phoenix, AZ | Arizona Grand Resort & Spa

SUBMIT AN ABSTRACT

https://apps.ans.org/esr/event-ars2026/

PROGRAM SPECIALIST

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EXECUTIVE CHAIRS

General Chair
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IMPORTANT DEADLINES

ABSTRACT SUBMISSIONS DUE
JUNE 1, 2026
NO EXTENSIONS

AUTHOR NOTIFICATION OF ACCEPTANCE (ABSTRACTS)
JUNE 8, 2026

FULL PAPER SUBMISSIONS DUE
JULY 8, 2026

AUTHOR NOTIFICATION OF ACCEPTANCE (FULL PAPERS)
JULY 24, 2026

REVISED FULL PAPERS DUE
AUGUST 7, 2026

ABOUT THE CONFERENCE

The recent acceleration in advanced reactor licensing efforts, both for non-light water designs and for light water designs, will naturally result in new and interesting safety-related research. This conference will provide the advanced nuclear industry a consistent venue to share their safety approaches and research.

The Nuclear Installations Safety Division (NISD) has historically sponsored both deterministic and probabilistic safety conference series to support information sharing and networking across the safety community. Since 1994, the International Topical Meeting on Advanced Reactor Safety (ARS) has been embedded in multiple conferences focused on specific issues (e.g., International Meeting on Severe Accident Assessment and Management: Lessons Learned from Fukushima Daiichi in 2012). Continuing this biennial conference series, the most recent gathering was ARS 2024; for reference to the latest discussions, please see the ARS 2024 proceedings and the related special issue in Nuclear Technology.

Building on this foundation, ARS 2026 will be of interest to those working in both deterministic and probabilistic safety approaches for various advanced reactor technologies. The meeting welcomes the submission of full-length technical papers, which will be peer reviewed and published as conference proceedings.

Detailed information and announcements regarding the conference will be posted on https://www.ans.org/meetings/ars2026/.

ABSTRACT GUIDELINES

Maximum of one page identifying title, authors, affiliations, and two to three paragraphs (total less than 500 words) describing the key concepts of the paper. A wide range of topic areas are highlighted in the next page of this call. The abstract template is on the ARS 2026 meeting page.

If your abstract is accepted, you will be invited to submit a full paper expanding on the topic. Only full papers will be presented at the conference. Abstract acceptance does not gurantee a slot in the technical program.

FULL PAPER SUBMISSION

Full papers must be submitted using the ARS conference template and formatting. The recommended paper length is 8-10 pages. The maximum allowable length is 14 pages. If an exception is made and a paper with more than 14 pages is accepted, page charges of $100/page will apply starting with page 15.

Authors of accepted papers must agree to register and attend the conference and present their papers. Papers that are not presented in person at the conference will not appear in the final conference publication. The full paper template is on the ARS 2026 meeting page.

Selected papers will be invited to submit extended manuscripts for publication as a special issue in Nuclear Technology.

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SUGGESTED TOPICS AND CATEGORIES:

1. TREATMENT OF PASSIVE AND INHERENT SAFETY FEATURES

1a. Levels of Defense-in-Depth
1b. Modeling of Passive Systems and Inherent Safety
1c. Space, Remote, or Small Reactors

2. DETERMINISTIC SAFETY ANALYSIS

2a. Design Basis T/H Analysis
2b. Design Basis Source Terms
2c. Normal Effluents
2d. Tools, Methods, and Validations

3. SYSTEMATIC RISK EVALUATIONS

3a. Boolean Evaluation Tools, Methods, and Verifications
3b. Reliability Databases and Parameter Estimations
3c. Unique Internal and External Hazards
3d. Mechanistic Source Terms
3e. Uncertainty Quantification

4. THE LICENSING NEXUS: PROVING "SAFE ENOUGH" AND "SECURE ENOUGH"

4a. Risk-Informed and Performance-Based Approaches
4b. Consequence-Based Approaches
4c. Bounding Site Approaches
4d. Meshing of the Deterministic and Probabilistic Safety Case
4e. Developing an Affirmative Safety Case
4f. Safety Informed Cyber and Physical Security
4g. Principal Design Criteria (e.g., SARRDLs/SAFDLs)

5. ADVANCED FUEL CYCLE SAFETY

5a. Reprocessing
5b. Fuel Fabrication and Synthesis
5c. Management of both HLW and LLW
5d. Isotope Production

6. DESIGN ASSURANCE

6a. Scaled Safety Testing
6b. Equipment Qualification Efforts
6c. Quality Assurance Considerations

7. DOE AUTHORIZATION SAFETY ANALYSIS

7a. Realistic, Conservative, or Bounding Approaches
7b. Harmonizing Frameworks: DOE and NRC
7c. Commercial Grade Dedication withing DOE Quality Requirements

8. RESEARCH AND TEST REACTOR SAFETY ANALYSIS

8a. Lessons Learned from Operational Events
8b. Risk-Informing the Design of the Next Generation of Research Reactors
8c. EBR-II and Early Generation Advanced Test Reactors

9. AI/ML FOR SAFETY ANALYSIS

9a. Surrogate Models and Digital Twins
9b. Verifiability of LLMs
9c. Autonomy and Human-In-The-Loop

Note: The topics listed above are not session titles; they are provided just as a guide. The ARS 2026 Technical Program Committee will be happy to expand the areas and include new sessions into the program. Please contact the Technical Program Chair, Mihai A. Diaconeasa, at madiacon@ncsu.edu to discuss new and alternative concepts.