



# ANS

# PSA 2021

Aug 29 - Sep 3  
[psa.ans.org/2021](http://psa.ans.org/2021)

## Call for Papers

**ANS | PSA 2021 17th International Topical Meeting on Probabilistic Safety Assessment and Analysis,  
“Risk-Informed Decision-Making in an Evolving World,”  
August 29 - September 3, 2021  
Columbus, Ohio USA • Hilton Columbus Downtown Hotel**

**IMPORTANT MILESTONES:**

***JANUARY – Submission of Abstracts: January 1, 2021***

***JANUARY – Author Notification of Acceptance: January 31, 2021***

***MARCH – Draft Full Papers: March 31, 2021***

***APRIL – Final Notification: April 30, 2021***

***MAY – Final Paper Copyright: May 31, 2021***

Since 1978, the ANS biennial topical conference on Probabilistic Safety Assessment (PSA) has been a forum for communication of major probabilistic risk topics associated with the safe operation of nuclear power plants (NPP) worldwide including issues, methods, applications, insights, policy, research and risk-informed regulation experience. In the shadow of a global pandemic, facing the growing impacts of climate change and the depletion of natural resources, with increased automation in the control of cars and airplanes, with improved understanding of the risks and benefits of alternative medical treatments, with the growth of cyber risks, risk assessment and risk management are playing an increasing role in all aspects of our lives. One of the focuses of the conference is how the concepts, tools, and techniques of PSA can effectively address these areas. Interchange of experiences and new visions will be an important part of the conference.

In assessing nuclear power plant risk, traditional PSA methods will need to change to address NPP designs with substantially different safety profiles. In the Licensing Modernization Project, a risk-informed approach has been developed by the Nuclear Energy Institute for assessing regulatory compliance of new reactor designs with a risk limit curve. New tools based on artificial intelligence are under development for interpreting data that will aid in the characterization of risk. Another focus of the conference will be to delineate the issues facing PSA and how these issues can be addressed.

The theme of this year’s PSA conference is to look forward to the future of PSA for NPPs and outward at non-nuclear disciplines to address the evolution of risk-management for a spectrum of societal issues. The first two days of the conference will primarily address risk management issues associated with broader societal and allied industry (chemical, aerospace, automotive, medical risks). The lessons learned from the application of PSAs to risk management will be discussed along with how these lessons can be applied to non-nuclear applications. The last three days will focus on NPP PSA issues as in past PSA conferences but with particular emphasis on development needs.





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## Call for Abstracts

### Abstract Guidelines

Maximum of one page identifying title, authors, affiliations, and two to three paragraphs (total less than 600 words) describing the key concepts of the paper. A wide range of topic areas are highlighted below. The abstract template is at [ans.org/meetings/c\\_2](http://ans.org/meetings/c_2) under the PSA 2021 meeting. Authors of accepted papers will be notified by January 31, 2021.

### Full Paper Submissions

Full papers must describe work that is new, significant, and relevant to risk assessment and risk-informed decision making. Authors of accepted papers must agree to register and attend the conference and present their papers in person. Papers that are not presented in person at the conference will not appear in the final conference publication. Authors of accepted full papers will be notified by April 30, 2021.

**Submit an Abstract:** [psa.ans.org/2021](http://psa.ans.org/2021)

**Program Specialist:** Janet Davis, 708-579-8253; [jdavis@ans.org](mailto:jdavis@ans.org)

## Paper Categories and Subject Areas

### Non-NPP Risk Management Dealing with the Follow Areas:

- Characterization of risks
- Risk tradeoffs
- Treatment of uncertainties
- Incorporation of risk in decision-making
- Incorporation of deterministic evaluations
- Risk acceptability criteria
- Consideration of risk regulations

### Non-NPP Risk Areas Handled in Risk-Management:

- Health risks
- Epidemic and pandemic risks
- Environmental impact risks
- Automotive safety
- Chemical industry risk
- Space flight risk
- Air flight risk
- Natural hazard risks to the built environment
- Physical security risks
- Grid and Power Systems

### NPP Risks:

#### Category I: Operating Nuclear Facility PSA Analyses

- Risk-Informed, Performance-Based Regulation
- Level I, 2, 3 PSA Applications
- Low Power and Shutdown Risk, Multi-Unit Risk
- Risk Management/Economic Risk
- Cyber/Security Risk
- Extended Accident Risk, FLEX Effectiveness
- External Event PSA (Seismic, Wind, Flood), Fukushima Accident

- Internal Flood Risk
- Risk-Informed Management Programs (Technical Specifications, Maintenance, Internal Fire, NFPA 805)
- Fuel Cycle Accident Risk, Proliferation Risk
- Test/Research Reactor and Non-Reactor Nuclear Facilities
- Transportation Risks
- Onsite Waste Storage
- Repository PSA

#### Category II: Advanced Reactor PSA

- Advanced Reactor Technology Neutral Framework (Part 53)
- Advanced Reactor PSA Standard
- SMR PSAs, Non-LWR PSAs
- Advanced Reactor Source Terms
- Micro-reactor PSAs

#### Category III: Advanced Methods/Tools

- Common Cause Failure
- Human Reliability Analysis
- Plant Ageing
- Margin Assessment
- Uncertainty Quantification, Sensitivity Analysis, PSA Verification and Validation
- Data Analytics and Artificial Intelligence
- Digital I&C and Software Reliability
- Dynamic PSA
- Passive System Reliability
- Safety Culture, Socio-Technical and Organizational Risk