PSA 2021

17th International Topical Meeting on Probabilistic Safety Assessment and Analysis

November 7-12, 2021 | Columbus, Ohio, USA | Hilton Columbus Downtown

CALL FOR PAPERS

EXECUTIVE CHAIRS

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ABSTRACTS DEADLINE: JANUARY 25, 2021

JANUARY → SUBMISSION OF ABSTRACTS: **January 25, 2021**

FEBRUARY → AUTHOR NOTIFICATION OF ACCEPTANCE: **February 15, 2021**

MAY → DRAFT FULL PAPERS: **May 17, 2021**

JULY → REVIEW NOTIFICATION: **July 15, 2021**

AUGUST → FINAL PAPERS/COPYRIGHT FORM: **August 15**

Since 1978, the ANS biennial topical conference on Probabilistic Safety Assessment has been a worldwide forum for communication of major probabilistic risk and safety topics, including issues, methods, applications, insights, policy, research, and risk-informed regulation experience. PSA 2021 will be of interest to those working in traditional applications such as nuclear reactor facilities, nonreactor installations, processing, decontamination & decommissioning, storage as well as other nontraditional areas where probabilistic safety approaches are applied. Topics of discussion are anticipated to include small modular reactor (SMR), Fukushima Dai-ichi, advanced reactor, multiunit and full site PSA, waste cleanup, natural phenomena, security, and fire risk, as well as security, fire risk, and more.. The role of probabilistic methods in understanding uncertainties and improving the safety and security of nuclear facilities and activities will be highlighted.

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.

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 on the PSA 2021 meeting page. Authors of accepted papers will be notified by February 15, 2021.

FULL PAPER SUBMISSION

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.

SUBMIT AN ABSTRACT

epsr.ans.org/meeting/?m=327

PROGRAM SPECIALIST

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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

NPP RISKS:

CATEGORY I: OPERATING NUCLEAR FACILITY PSA ANALYSES (REGULATIONS, STANDARDS, APPLICATIONS)

- 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 (REGULATIONS, STANDARDS, APPLICATIONS)

- 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

Note: The topics listed above are not session titles; they are provided just as a guide. The PSA 2021 Technical Program Committee will be happy to expand the areas and include new sessions into the program. Please contact the Technical Program Chair to discuss new and alternative concepts.