Winter Meeting and Technology Expo 2022

November 13–17, 2022 | Phoenix, AZ | Arizona Grand Resort

CALL FOR PAPERS

EXECUTIVE CHAIRS

General Chair
John R. Longenecker (Longenecker Associates, Inc.)

Technical Program Chair
Kenneth Geelhood (PNNL)

Assistant Technical Program Chair:
Jean-Francois Lucchini (LANL)

SUMMARY DEADLINE: THURSDAY, JUNE 30, 2022

JUNE → SUBMISSION OF SUMMARIES: **Thursday, June 30, 2022**

JULY → AUTHOR NOTIFICATION OF ACCEPTANCE: **Monday, July 25, 2022**

AUGUST → REVISED SUMMARIES DUE: **Monday, August 8, 2022**

GUIDELINES FOR SUMMARIES

Please submit summaries describing work that is new, significant, and relevant to the nuclear industry. ANS will publish all accepted summaries in the TRANSACTIONS. Summaries are presented orally at the meeting, and presenters are expected to register for the meeting. Non–U.S. attendees requesting a Visa or invitation letter: registrar@ans.org. Full papers based on summaries may be published elsewhere, but the summaries become the property of ANS. Under no circumstances should a summary or full paper be published in any other publication before presentation at the ANS meeting. It is the author's responsibility to protect classified, export-controlled, or proprietary information.

FORMAT

Authors are required to use the ANS Template and Guidelines for TRANSACTIONS Summary Preparation provided at ans.org/pubs/transactions. Summaries must be submitted electronically using original Adobe Acrobat PDF documents and the ANS Electronic Paper Submission and Review (EPSR) system. Summaries not based on the ANS template will be rejected.

CONTENT

1. Introduction: State the purpose of the work.
2. Description of the actual work: Must be new and significant.
3. Results: Discuss their significance.
4. References: If any, must be closely related published works. Minimize the number of references.
5. Do not present a bibliographical listing.
5. If acknowledgements are required (e.g., to the author's employer), it is the author's responsibility to include the acknowledgement in the summary as either an end-of-summary note or footnote. Please ensure such footnotes do not interfere with the bottom margin, and do not format acknowledgements as headers.

LENGTH AND PAGE CHARGES

1. The minimum length is one full page.
2. The maximum length is four pages, including references, tables, and figures. After you save your document as a PDF, verify that it is still four or fewer pages.
3. Summaries will incur a $50 per page publication fee.
4. Limit title to ten words; limit listing authors to three or fewer if possible.

EXECUTIVE SESSIONS

Have an idea for an Executive Session? If so, email the Program Specialist (contact information below). Executive Sessions take a broader look at developments in nuclear science and technology and their impact on policy and markets.

SUBMIT A SUMMARY

epsr.ans.org/meeting/?m=313

PROGRAM SPECIALIST

Janet Davis
708-579-8253
jdavis@ans.org

ANS® Winter Meeting and Technology Expo 2022

November 13–17, 2022 | Phoenix, AZ | Arizona Grand Resort

2022 WINTER MEETING: SESSION TITLES BY DIVISION (P) = Panel

1. AEROSPACE NUCLEAR SCIENCE AND TECHNOLOGY (ANSTD)
- 1a. Aerospace Nuclear Science and Technology

2. DECOMMISSIONING AND ENVIRONMENTAL SCIENCES (DESD)
- 2a. Uranium Mine Reclamation
- 2b. Future of Nuclear Maritime Propulsion
- 2c. General Decommissioning
- 2d. Climate Effects on the West (P)

3. EDUCATION, TRAINING, AND WORKFORCE DEVELOPMENT (ETWDD)
- 3a. Cutting Edge Techniques in Education, Training and Distance Education
- 3b. Student Design Competition
- 3c. Innovations in Nuclear Technology R&D Awards
- 3d. Focus on Communications (P)
- 3e. Research by U.S. DOE NEUP Sponsored Students
- 3f. Training, Human Performance, and Workforce Development

4. FUSION ENERGY (FED)
- 4a. Fusion: General

5. HUMAN FACTORS, INSTRUMENTATION, AND CONTROLS (HFICD)
- 5a. Recent Advances in Human Factors
- 5b. Recent Advances in Instrumentation and Controls
- 5c. Human Factors Evaluation of HMIs
- 5d. Advances in Digital I&C
- 5e. Sensors and Signal Processing
- 5f. New Designs of HMIs and I&C
- 5g. Situational Awareness and Operator Support
- 5h. Automation and Autonomy
- 5i. Cybersecurity for Nuclear Installations
- 5j. Operational Considerations for New Reactor Designs
- 5k. Future Concepts in HF and I&C

6. ISOTOPES AND RADIATION (IRD)
- 6a. Safeguards Measurement Techniques for High Level Radioactive Waste
- 6b. Isotopes and Radiation: General

7. MATERIALS SCIENCE AND TECHNOLOGY (MSTD)
- 7a. Fuel and Materials for Molten Salt Reactors
- 7b. In-Pile Testing of Nuclear Fuels and Materials
- 7c. Advanced Manufacturing/Additive Manufacturing
- 7d. Sensors and In-Pile Instrumentation
- 7e. Nuclear Science User Facilities
- 7f. Accident Tolerant Fuels
- 7g. Nuclear Fuels
- 7h. Aging of Materials
- 7i. Fuels and Materials for Fast Reactors
- 7j. Irradiation Experiments for Nuclear Materials and Fuels Research
- 7k. Actinide Science
- 7l. Machine Learning and Artificial Intelligence Applications in Nuclear Materials

8. MATHEMATICS AND COMPUTATION (MCD)
- 8a. Transport Methods
- 8b. Computational Methods and Mathematical Modeling
- 8c. Uncertainty Quantification, Sensitivity Analysis, and Machine Learning
- 8d. Current Issues in Computational Methods: Roundtable (P)

9. NUCLEAR CRITICALITY SAFETY (NCSD)
- 9a. Recent Nuclear Criticality Safety Program Technical Accomplishments
- 9b. Virtual Training: The Good, the Bad, and the Ugly (P)
- 9c. Leadership and Oversight of Nuclear Criticality Safety Programs (P)
- 9d. ANS 8 Standards Forum (P)
- 9e. Critical and Subcritical Experiments
- 9f. Data, Analysis and Operations in Nuclear Criticality Safety

10. NUCLEAR INSTALLATIONS SAFETY (NISD)
- 10a. Current Topics in Probabilistic Risk Analysis
- 10b. Nuclear Installations Safety: General
- 10c. Realizing the Benefits of Risk-Informed and Performance-Based (RIPB) Approaches (P)
- 10d. Safety of Hydrogen Production in Nuclear Power Installations: Early Insights from Analytical Studies and Demonstration Projects (P)

11. NUCLEAR NONPROLIFERATION POLICY (NNPD)
- 11a. Safeguards and Security by Design for Advanced Reactors (P)
- 11b. Prospects for Multinational and Bilateral Arms Talks (P)
- 11c. Technology and Policy Advancements in Nuclear Nonproliferation

12. OPERATIONS AND POWER (OPD)
- 12a. Operations and Power: General
- 12b. Advanced Nuclear Reactors and Power Systems
- 12c. Energy Storage Integration with Nuclear Power Plants
- 12d. Hybrid and Integrated Energy Systems
- 12e. Modeling Nuclear Power Plant Market Deployments
- 12f. Nuclear Historic Landmark Award and Walter Zinn Medal Special Session (P)
- 12g. Repowering Retiring Coal with New Nuclear (P)
- 12h. Progress in Advanced Reactor Demonstrations and Development (P)
- 12i. Digital Twin for Advanced Nuclear (P)

13. RADIATION PROTECTION AND SHIELDING (RPSD)
- 13a. Radiation Protection and Shielding: General
- 13b. Computational Methods for Radiation Protection and Shielding
- 13c. Million Person Study Methods and Results

14. REACTOR PHYSICS (RPD)
- 14a. Reactor Physics: General
- 14b. Reactor Analysis Methods
- 14c. Reactor Physics Design, Validation and Operational Experience
- 14d. Reactor Physics of Advanced Reactors
- 14e. Reactor Physics of Micro Reactors for Terrestrial and Space Applications
- 14f. Advances in Reactor Design Methods
- 14g. Research Reactors in Support of Advanced Reactors R&D (P)
- 14h. Research Reactors in Support of Advanced Reactors R&D
- 14i. Advances in Education in Criticality Evaluations and Reactor Physics (P)
- 14j. Reactor Physics and Digital Twins
- 14k. Large Modular Reactors: Practical Options to Achieve an Economical Grid Supply and a Sustainable Nuclear Power Industry (P)
- 14l. Preliminary Design of the MARVEL Microreactor
- 14m. Overview of the MARVEL Project (P)
- 14n. Wigner Award Lecture (P)
- 14o. NRIC Virtual Test Bed (VTB)
- 14p. Reactor Demonstration Updates in the Advanced Reactor Demonstration Program (ARDP) (P)
- 14q. Challenges in Multiphysics Coupling of Radiation Transport Codes (P)
- 14r. Methods to Determine Equilibrium Core Models of Pebble-Bed Reactors (P)

15. ROBOTICS AND REMOTE SYSTEMS (RRSD)
- 15a. Robotic and Remote Systems: General

16. THERMAL HYDRAULICS (THD)
- 16a. Computational Thermal Hydraulics
- 16b. Experimental Thermal Hydraulics
- 16c. Two-phase Flow and Heat Transfer Fundamentals
- 16d. General Thermal Hydraulics
- 16e. Computational Fluid Dynamics and Thermal Hydraulics of Microreactors
- 16f. Thermal Hydraulics of Advanced Reactors
- 16g. Machine Learning Applications for Thermal Hydraulics
- 16h. Multiphase Thermal Hydraulics: Challenges in Computation and Experiment (P)
- 16i. Experimental Facilities and Capabilities for Thermal Hydraulic Testing (P)
- 16j. Thermal Hydraulics Issues in Licensing of Advanced Reactors (P)

2022 WINTER MEETING: TECHNICAL DIVISIONS

AEROSPACE NUCLEAR SCIENCE AND TECHNOLOGY (ANSTD)
Jeffrey King, kingjc@mines.edu

DECOMMISSIONING AND ENVIRONMENTAL SCIENCES (DESD)
Dustin Miller, Dustin.Miller@jacobs.com
Jim Byrne, jbyrne4424@comcast.net

EDUCATION, TRAINING, AND WORKFORCE DEVELOPMENT (ETWDD)
Lisa Marshall, lisammarshall@yahoo.com

FUEL CYCLE AND WASTE MANAGEMENT (FCWMD)
Ben Cipiti, bbcipit@sandia.gov

FUSION ENERGY (FED)
Lauren Garrison, garrisonlm@ornl.gov

HUMAN FACTORS, INSTRUMENTATION, AND CONTROLS (HFICD)
Jamie Coble, jcoble1@utk.edu

ISOTOPES AND RADIATION (IRD)
Igor Jovanovic, ijov@umich.edu
Kenan Unlu, K-unlu@psu.edu

MATERIALS SCIENCE AND TECHNOLOGY (MSTD)
Kenneth Geelhood, Kenneth.Geelhood@pnnl.gov

MATHEMATICS AND COMPUTATION (MCD)
Sebastian Schunert, sebastian.schunert@inl.gov
Brian Kiedrowski, bckiedro@umich.edu

NUCLEAR CRITICALITY SAFETY (NCSD)
Vladimir Sobes, sobesv@utk.edu
Ben Martin, benjamin.martin@cns.doe.gov

NUCLEAR INSTALLATIONS SAFETY (NISD)
Askin Guler Yigitoglu, yigitoglua@ornl.gov
Aaron Epiney, aaron.epiney@inl.gov

NUCLEAR NONPROLIFERATION POLICY (NNPD)
Stefani Buster, srbuster@gmail.com
Jim Behrens, jwbehrens@comcast.net

OPERATIONS AND POWER (OPD)
W. Neal Mann, wmann@anl.gov

RADIATION PROTECTION AND SHIELDING (RPSD)
Amir Bahadori, bahadori@ksu.edu

REACTOR PHYSICS (RPD)
Max Fratoni, maxfratoni@berkeley.edu

ROBOTICS AND REMOTE SYSTEMS (RRSD)
Brian O'Neil, oneil@lanl.gov

THERMAL HYDRAULICS (THD)
Igor Bolotnov, igor_bolotnov@ncsu.edu
Dillon Shaver, dshaver@anl.gov

YOUNG MEMBERS GROUP (YMG)
Julianne McCallum, jgm@nei.org
Alisha Kasam-Griffith, akasam@anl.gov

EMBEDDED TOPICAL MEETING

International High-Level Radioactive Waste Management Conference
Sponsored by the **Fuel Cycle and Waste Management Division (FCWMD)**
ans.org/meetings/ihlrwm2022/