

2017 Annual Meeting

June 11-15, 2017 | San Francisco, CA | Hyatt Regency

CALL FOR PAPERS

Innovating Nuclear Power

CONFERENCE CHAIRS:

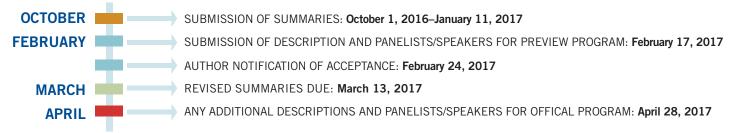
General Chair Jose N. Reyes, Jr., NuScale Power

Assistant General Chair
Daniel T. Ingersoll, NuScale Power

Technical Program Chair
Raymond Klann, Pacific Northwest National Laboratory

Assistant Technical Program Chair
Kenneth J. Geelhood, Pacific Northwest National Laboratory

SUMMARY DEADLINE: JANUARY 11, 2017



FORMAT

Authors are now REQUIRED to use the ANS Template and Guidelines for TRANSACTIONS Summary Preparation provided on the ANS Web site. Summaries must be submitted electronically using Adobe Acrobat (PDF) files or original Microsoft Word documents and the ANS Electronic Paper Submission and Review System. Summaries not based on the ANS Template will be REJECTED.

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. Papers are presented orally at the meeting, and presenters are expected to register for the meeting. Completed papers 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 prior to presentation at the ANS meeting. It is the author's responsibility to protect classified or proprietary information.

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.

LENGTH

- 1. The minimum length is one full page.
- 2. The maximum length is four pages, including references, tables, and figures.
- 3. Limit title to ten words; limit listing authors to three or fewer if possible.

PAGE CHARGE

ANS charges \$100 per final printed page in the TRANSACTIONS. Authors should be prepared to provide their purchase order numbers when submitting their summaries electronically.

REQUIRED TEMPLATE AND GUIDELINES FOR TRANSACTIONS SUMMARY PREPARATION

www.ans.org/pubs/transactions

SUBMIT A SUMMARY

www.ans.org/meetings

TRANSACTIONS COORDINATOR

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INFORMATION SERVICES

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1. ACCELERATOR APPLICATIONS (AAD)

1a. Accelerator Applications: General

2. AEROSPACE NUCLEAR SCIENCE AND TECHNOLOGY (ANSTD)

2a. Aerospace Nuclear Science and Technology: General

3. BIOLOGY AND MEDICINE (BMD)

3a. Biology and Medicine: General

4. DECOMMISSIONING AND ENVIRONMENTAL SCIENCES (DESD)

- 4a. Decommissioning and Environmental Sciences: General
- 4b. Five Decades of the California Environmental Quality Act (CEQA): So What Have We Learned?
- 4c. Advancements in the Decommissioning of Commercial Nuclear Power Plants: An Executive Panel (P)
- 4d. Executive Stakeholder Involvement in Decommissioning Planning and Execution: Impacts on Project Performance and Environmental Outcomes (P)

EDUCATION, TRAINING, AND WORKFORCE DEVELOPMENT (ETWDD)

- 5a. Education, Training and Workforce Development: General
- 5b. Focus on Communications-I (P)
- 5c. Focus on Communications-II (P)

6. FUEL CYCLE AND WASTE MANAGEMENT (FCWMD)

- 6a. Economics of Recycling/Reprocessing
- 6b. Fuel Cycle Scenario/Transition Studies
- 6c. Backend of the Fuel Cycle for Small Modular Reactors (P)
- 6d. Integrated Used Fuel Storage Sites
- 6e. The Waste Isolation Pilot Plant
- 6f. Fixed Neutron Absorber Materials for Wet and Dry Used Fuel Storage
- 6g. Long-Term Once-Through Fuel Cycles-From Seawater Uranium to Breed and Burn
- 6h. Recycle and Reuse of Used Nuclear Fuel Resources
- 6i. University Research in Fuel Cycle and Waste Management
- 6j. Innovation Opportunities in Future Fuel Cycles (P)
- 6k. Electrochemical Separation for Used Nuclear Fuels
- 61. Waste Management, Ethics, and Resilience: Professor Joonhong Ahn's Legacy
- 6m. Fuel Cycle and Waste Management: General

7. FUSION ENERGY (FED)

- 7a. Magnetic and Inertial Confinement Fusion —Common Technology Development Needs (P)
- 7b. Fusion Energy: General

8. HUMAN FACTORS, INSTRUMENTATION, AND CONTROLS (HFICD)

- 8a. Supporting the Nuclear Workforce with Electronic Workpackages and Computer-Based Procedures
- 8b. Instrumentation and Controls —Cyber Influence
- 8c. Human Factors, Instrumentation, and Controls: General

9. ISOTOPES AND RADIATION (IRD)

9a. Isotopes and Radiation: General

10. MATERIALS SCIENCE AND TECHNOLOGY (MSTD)

- 10a. Nuclear Fuels and Materials in Fast Reactors
- 10b. Accident Tolerant Fuels
- 10c. Nuclear Science User Facilities: Experimental Results
- 10d. Welding and Joining
- 10e. Advanced Measurement Techniques
- 10f. Post-Irradiation Examination
- 10g. Advanced Manufacturing
- 10h. Transient Fuel Performance
- 10i. Nuclear Fuels
- 10j. Neutron Scattering and Imaging

11. MATHEMATICS AND COMPUTATION (MCD)

- 11a. Current Issues in Computational Methods-Roundtable
- 11b. Uncertainty Quantification and Sensitivity Analysis Methods
- 11c. Transport Methods
- 11d. Computational Methods and Mathematical Modeling

12. NUCLEAR CRITICALITY SAFETY (NCSD)

- 12a. Criticality Accident Alarm Systems
- 12b. Sharing of Good Industry Practices and/or Lessons Learned in Nuclear Criticality Safety (P)
- 12c. Nuclear Criticality Safety Division Pioneer Discussion (P)
- 12d. ANS-8 Standards Forum
- 12e. Data, Analysis and Operations in Nuclear Criticality Safety

13. NUCLEAR INSTALLATIONS SAFETY (NISD)

- 13a. Nuclear Safety R&D at the Department of Energy
- 13b. Risk Aspects of Integrated Hybrid Energy Systems
- 13c. Risk Aspects of Gateway for Accelerated Innovation in Nuclear (GAIN)
- 13d. Zero Emergency Planning Zone 10 MW NPP Remote Monitoring (ARPA-E)
- 13e. Emergent Topics in Consensus Standards
- 13f. Nuclear Installations Safety: General
- 13g. Current Topics in Probabilistic Risk Analysis

14. NUCLEAR NONPROLIFERATION POLICY (NNPD)

- 14a. Nuclear Nonproliferation Policy: General
- 14b. Advancing Global Nuclear Energy and Strengthening National Security (P)

15. OPERATIONS AND POWER (OPD)

- 15a. Hybrid Energy Systems (P)
- 15b. New Nuclear Construction Around the World (P)
- 15c. Cyber Security (P)
- 15d. Thermal Energy Storage Systems and Their Integration with NPPs
- 15e. Water Chemistry of Nuclear Reactor Systems
- 15f. Advanced/Gen-IV Reactors

16. RADIATION PROTECTION AND SHIELDING (RPSD)

- 16a. Radiation Protection and Shielding: General
- 16b. Computation Tools for Radiation Protection and Shielding
- 16c. Radiation Protection and Shielding-Roundtable

17. REACTOR PHYSICS (RPD)

- 17a. Reactor Physics: General
- 17b. Reactor Physics Design, Validation and Operational Experience
- 17c. Reactor Analysis Methods
- 17d. Research and Test Reactors
- 17e. Recent Advancements in Liquid and Solid Fuel Molten Salt Reactors
- 17f. Reactor Innovation Resurgence in 21st Century—Gen. IV Outdated or are we Circling Back to 1940s
- 17g. DOE Nuclear Engineering University Program (NEUP) Sponsored Student Research
- 17h. Load Follow, Nuclear Power Plants Flexible Power Operation

18. ROBOTICS AND REMOTE SYSTEMS (RRSD)

18a. Robotics and Remote Systems: General

19. THERMAL HYDRAULICS (THD)

- 19a. Current Verification and Validation Efforts of Multiphysics Packages [MCD]
- 19b. Advances and Challenges in Thermal-Hydraulic Feedback Modeling in CASL
- 19c. Multi-Physics Multi-Scale Modeling and Simulation
- 19d. Advances in Severe Accidents Modeling
- 19e. Advancements in Thermal-Hydraulic System Scaling Techniques
- 19f. Thermal-Hydraulics Development and Challenges in Fluoride Salt-Cooled High-Temperature Reactors
- 19g. Two Phase Flow and Heat Transfer Fundamentals
- 19h. Experimental Thermal-Hydraulics
- 19i. Thermal-Hydraulics: General
- 19j. Computational Thermal-Hydraulics

2017 ANNUAL MEETING: TECHNICAL DIVISIONS

ACCELERATOR APPLICATIONS (AAD)

Peter Hosemann, peterh@berkeley.edu

AEROSPACE NUCLEAR SCIENCE AND TECHNOLOGY (ANSTD)

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EDUCATION, TRAINING, AND WORKFORCE DEVELOPMENT (ETWDD)

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REACTOR PHYSICS (RPD)

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THERMAL HYDRAULICS (THD)

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Embedded Topical

June 11–15, 2017 | San Francisco, CA | Hyatt Regency

CALL FOR PAPERS

10th International Embedded Topical Meeting on Nuclear Plant Instrumentation, Control and Human Machine Interface Technologies (NPIC & HMIT 2017)

OFFICIALS:

General Chairs

Clayton Scott, Schneider Electric

Sacit M. Cetiner, Oak Ridge National Laboratory

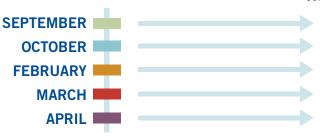
Technical Program Chairs

Charles McCarthy–I&C Tracks, Northrup Grumman

Sean M. Smith-I&C Tracks, Lockheed Martin

David Desaulniers-HFE Tracks, U.S. Nuclear Regulatory Commission

Johanna Oxstrand—HFE Tracks, Idaho National Laboratory



ABSTRACTS DUE: September 30, 2016 (less than 1000 words)

REVIEW NOTIFICATION: October 15, 2016

FULL PAPERS DUE: February 28, 2017

REVIEW NOTIFICATION: March 30, 2017

FINAL PAPERS DUE: April 15, 2017

ABSTRACT GUIDELINES

Maximum of one page identifying title, authors, affiliations, and three paragraphs (total less than 1000 words) describing the key concepts of the paper. A wide range of topic areas are highlighted on the second page of this call. Authors are encouraged to submit papers on these proposed topics as well as others. Authors of accepted abstracts will be notified by **October 15, 2016.**

FULL PAPER SUBMISSION

Full papers must describe work that is new, significant, and relevant to the nuclear industry and the subject of the conference. 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 March 30, 2017.

SUBMISSION WEBSITE

http://npic-hmit2017.org/

Detailed information and announcements regarding the conference will be posted on the website.

ABOUT THE MEETING

This embedded topical is the tenth in a series organized by ANS Human Factors, and Instrumentation and Controls Division (HFICD). Authors are invited to participate in the International Topical Meeting on Nuclear Plant Instrumentation, Control, and Human-Machine Interface Technologies (NPIC & HMIT).

Sponsored by American Nuclear Society (ANS), NPIC & HMIT builds upon the successes of previous meetings. The meeting welcomes the submission of full-length technical papers, which will be peer reviewed and published as conference proceedings. Submitted papers must be presented.

INSTRUMENTATION AND CONTROLS (I&C)

Latest Trends in Digital I&C

Management of I&C Aging and Obsolescence

Electromagnetic Compatibility (EMC) and EMI/RFI Issues

Nuclear Energy R&D in I&C Area Next Generation I&C Systems

Safety Critical Software Development, Qualification, and V&V

I&C and OLM Considerations for Life Beyond 60 Years

Wireless Technologies for Nuclear Facilities Education and Training of I&C Professionals

Diversity and Defense in Depth (D3)
Modeling Digital I&C Systems in PRA/PSA

Advanced Surveillance, Diagnostics, and Prognostics

Field Programmable Gate Array (FPGA)

I&C Modernization Experience SMR Instrumentation and Control

I&C for Advanced Reactors

On-line Monitoring for Maintenance Optimization Hazard and Failure Mode Analysis for Digital Systems

I&C Regulations, Standards, and Guidelines

Digital System Reliability

Light Water Reactor Sustainability (LWRS)
On-Line Monitoring of Rod Control Systems

Cyber Security in Digital I&C

Managing and Preserving I&C Knowledge and Competence

Advanced Sensors and Measurement Technologies

Cable Aging and Cable Condition Monitoring Research Reactor I&C

In-Pile Instrumentation

I&C Lessons Learned from Fukushima Productivity/Efficiency Improvement Digital Control System Applications

General Sessions in I&C

HUMAN FACTORS (HF)

Current Concepts in Advanced Control Rooms Experience with Control Room Modernization

Lessons Learned from the Design and Operation of Generation III and III+ Reactors

Nuclear Energy R&D in HMI Areas

Applications of Technology to Enhance O&M

Design and Development of Group-View, Wall-Panel Displays Visualization Techniques to Improve Human Decision Making

Computerized Procedure Systems

Use of Virtual Reality to Support Design and O&M

Use of Simulation for Design, Engineering, Maintenance and Verification Activities

Emerging Concepts of Operations for Advanced Reactors

Innovative Human Interface Technologies

HFE Use of PRA/PSA Insights and Results for Design and Operations

Computerized Operator Decision and Support Systems

Innovative Solutions to Alarm Overload

HFE Verification and Validation: Approaches and Methods Designing Control Rooms for Small Modular Reactors

HFE Education and Training

Lessons Learned from Soft Controls in Plant Operations

Human Factor Lessons from Fukushima

HFE Contributions to Productivity and Efficiency

Human Factors Aspects of SMRs

HFE Standards and Guidelines Update

Workstation and Control Room Layout Design for Computer-Based Control Rooms
Use of Work-Domain and Cognitive Task Analysis for Human-System Interface Design
Human Reliability Issues in Digital Systems and Computer-Based Control Rooms

Operation of Hybrid Control Room General Sessions in Human Factors Advances in HFE Design and Analysis Tools

Advances in Human-Automation and Human Performance Assessment

Note: The topics listed above are not session titles; they are provided just as a guide for paper topics. The technical program committee will be happy to expand the areas and include new sessions into the program. Please contact the Technical Program Chairs for suggestions.