ANS 2017 Annual Meeting

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

CALL FOR PAPERS

Innovating Nuclear Power

CONFERENCE CHAIRS:

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SUMMARY DEADLINE: JANUARY 11, 2017

OCTOBER — SUBMISSION OF SUMMARIES: **October 1, 2016–January 11, 2017**

FEBRUARY — SUBMISSION OF DESCRIPTION AND PANELISTS/SPEAKERS FOR PREVIEW PROGRAM: **February 17, 2017**

AUTHOR NOTIFICATION OF ACCEPTANCE: **February 24, 2017**

MARCH — REVISED SUMMARIES DUE: **March 13, 2017**

APRIL — ANY ADDITIONAL DESCRIPTIONS AND PANELISTS/SPEAKERS FOR OFFICAL PROGRAM: **April 28, 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

Ellen Leitschuh
Tel: 708/579-8253
Fax: 708/352-8313
eleitschuh@ans.org

INFORMATION SERVICES

Joe Koblich, Director
Tel: 708/579-8237
Fax: 708/352-8274

2017 ANNUAL MEETING: SESSION TITLES BY DIVISION

(P) = Panel

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)

5. 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
6l. 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)
Robert O'Brien, robert.obrien@inl.gov

BIOLOGY AND MEDICINE (BMD)
Brian P. Bednarz, bbednarz2@wisc.edu

EDUCATION, TRAINING, AND WORKFORCE DEVELOPMENT (ETWDD)
Lisa Marshall, lisa.marshall@ncsu.edu

DECOMMISSIONING AND ENVIRONMENTAL SCIENCES (DESD)
Brooke Traynham, brooke.traynham@us.pwc.com

FUEL CYCLE AND WASTE MANAGEMENT (FCWMD)
Jared A. Johnson, johnsonja@ornl.gov

FUSION ENERGY (FED)
Arnold Lumsdaine, lumsdainea@ornl.gov

HUMAN FACTORS, INSTRUMENTATION, AND CONTROLS (HFICD)
Kathryn McCarthy, Kathryn.McCarthy@inl.gov

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

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

MATHEMATICS AND COMPUTATION (MCD)
Jeff Densmore, jeffery.densmore@unnpp.gov

NUCLEAR CRITICALITY SAFETY (NCSD)
Deborah A. Hill, Deborah.a.hilll@nnl.co.uk

NUCLEAR INSTALLATIONS SAFETY (NISD)
Nicholas R. Brown, brownnr@ornl.gov

NUCLEAR NONPROLIFERATION POLICY (NNPD)
Rian Bahran, bahran@gmail.com

OPERATIONS AND POWER (OPD)
Piyush Sabharwall, piyush.sabharwall@inl.gov

RADIATION PROTECTION AND SHIELDING (RPSD)
Peter Caracappa, caracp3@rpi.edu

REACTOR PHYSICS (RPD)
Cristian Rabiti, Cristian.rabiti@inl.gov

ROBOTICS AND REMOTE SYSTEMS (RRSD)
Mitch W. Pryor, mpryor@utexas.edu

THERMAL HYDRAULICS (THD)
Elia Merzari, pcchair@thd-ans.org

YOUNG MEMBERS GROUP (YMG)
Catherine Perego,peregocm@westinghouse.com,
Jitesh Kuntawala, jiteshkuntawala@ufl.edu

ANS | 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:

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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

SEPTEMBER → ABSTRACTS DUE: **September 30, 2016** (less than 1000 words)
OCTOBER → REVIEW NOTIFICATION: **October 15, 2016**
FEBRUARY → FULL PAPERS DUE: **February 28, 2017**
MARCH → REVIEW NOTIFICATION: **March 30, 2017**
APRIL → 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.