



ANS

11th Nuclear Plant Instrumentation, Control and Human-Machine Interface Technologies

February 9–14, 2019 | Orlando, FL | Renaissance Orlando at Seaworld



CALL FOR PAPERS

EXECUTIVE CHAIRS

Honorary Chair

Bradley Adams (VP of Engineering, Southern Nuclear Operating Company)

General Co-Chairs

Daniel Churchman (Fleet Engineering Director, Southern Nuclear Operating Company)

Jason Remer (Director of Life Extension and New Technology, Nuclear Energy Institute)

Technical Co-Chairs (I&C)

Pradeep Ramuhalli (Senior Research Scientist, Pacific Northwest National Laboratory)

Technical Co-Chairs (I&C) CONTINUED

Michael Doster (Prof. of Nuclear Engineering, North Carolina State University)

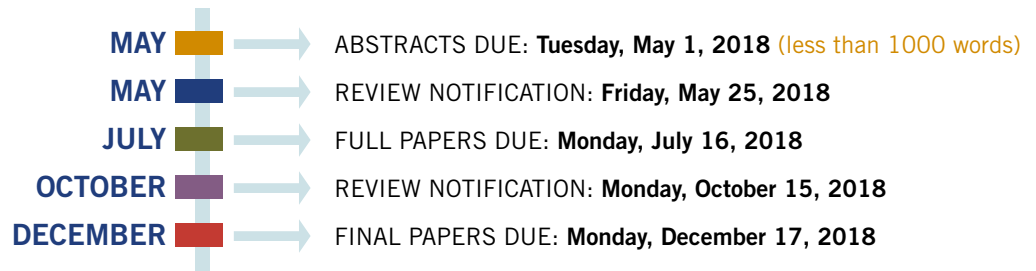
James Turso (Asst. Dir. and Assoc. Res. Prof., Penn State University Radiation Science and Engineering Center)

Technical Co-Chairs (HFE)

Ron Boring (Human Factors Principal Scientist, Idaho National Laboratory)

Carol Smidts (Prof. of Nuclear Engineering, Ohio State University)

ABSTRACT DEADLINE: TUESDAY, MAY 1, 2018



ABOUT THE MEETING

This topical meeting is the eleventh 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. Detailed information and announcements regarding the conference will be posted on ans.org/meetings/npichmit/.

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 **May 25, 2018**.

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 **October 15, 2018**.

SUBMIT AN ABSTRACT
ans.org/meetings/npichmit/

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SUGGESTED TOPICS

INSTRUMENTATION AND CONTROLS (I&C)

Data Analytics
Autonomous Control
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.