ANS CALL FOR PAPERS

SUBMIT AN ABSTRACT

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PROGRAM SPECIALIST

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In Cooperation

IAEA

NPIC&HMIT 2025

14th International Topical Meeting on Nuclear Plant Instrumentation, Control & Human-Machine Interface Technologies (NPIC&HMIT 2025)

June 15–18, 2025 | Chicago, IL, USA | Chicago Marriott Downtown

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IMPORTANT DEADLINES

ABSTRACTS SUBMISSION
FRIDAY, OCTOBER 25, 2024

ABSTRACT REVIEW NOTIFICATION
TUESDAY, NOVEMBER 26, 2024

FULL PAPERS SUBMISSION
FRIDAY, FEBRUARY 7, 2025

FULL PAPER REVIEW ACCEPTANCE NOTIFICATION
MONDAY, MARCH 3, 2025

FINAL CAMERA-READY PAPERS SUBMISSION
MONDAY, MARCH 17, 2025

ABOUT THE CONFERENCE

This conference is the 14th in a series organized by ANS's Human Factors, Instrumentation & 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 2025).

Sponsored by the American Nuclear Society (ANS), NPIC & HMIT is the *de facto* forum for nuclear instrumentation and control and human factors engineering professionals to meet with leaders in industry and academia, discover the state of the technology, exchange information, and discuss future directions.

The conference welcomes the submission of full-length technical papers in I&C, human factors, cyber security, artificial intelligence, and machine learning, which will be peer reviewed and published as conference proceedings. Accepted papers must be presented at the conference to be included in the conference proceedings. Papers will be scheduled for either podium presentations or the student competition. Detailed information and announcements regarding the conference will be posted on the NPIC&HMIT web page.

For participants from industry and vendor organizations: You have the option to submit an abstract only. If the abstract is accepted, you will provide a presentation at the conference; a full paper will not be required. For this option, submit your abstract to Track A, Abstract Option for Industry and Vendor Presentations

See p. 2 for submittal guidelines and topic options.

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ABSTRACT GUIDELINES

Maximum of one page identifying title, authors, affiliations, and three paragraphs (total fewer than 500 words) describing the key concepts of the paper. A wide range of topic areas are highlighted below. Authors are encouraged to submit papers on these proposed topics as well as others. The abstract template is on the NPIC&HMIT 2025 web page. Additionally, please follow these formatting/submittal guidelines:

- Do not use all capital letters for the title or any part of any authors' names. For the title of the abstract, Capitalize the First Letter of Major Words. Author names should be First Name or Initial(s) followed by Last Name.
- The names of all authors should be entered into the Authors page in the Electronic Paper Submission and Review (EPSR) system. List the authors in the same order in which their names appear in the abstract. Author information in the conference program is derived from the entries in the EPSR's Authors page.
- In the EPSR, authors' affiliations should match the affiliation provided on the abstract itself. If an author has multiple affiliations, enter the ONE that should be included in the program, assuming the abstract and subsequent paper are accepted.

FULL PAPER SUBMISSION

Authors of accepted abstracts will be invited to submit full papers. Full papers must describe work that is new, significant, and relevant to the conference. The limit for full-paper submissions is 10 pages. If a paper over 10 pages is accepted, page charges are $100/page for p. 11 and above. Authors of accepted papers must agree to register and attend the conference and present their papers. Papers that are not presented in person at the conference will not appear in the final conference publication.

STUDENT PAPER COMPETITION

We welcome and encourage students to submit papers to this conference. Please ensure that papers for which the Primary Author is a student are identified as such in the yes/no student-status question in the Authors section of the EPSR. The committee will use this information to identify the papers invited for the student paper competition. A "student paper" is a paper whose first author and presenter is a student.

SUGGESTED TOPICS

IC. INSTRUMENTATION AND CONTROLS (I&C)

IC1	Advanced Sensor Technology
IC2	Advanced Surveillance, Online Monitoring, Diagnostics, and Prognostics
IC3	Autonomous Control and Operation of Nuclear Reactors
IC4	Cybersecurity in Nuclear Reactors
IC5	Cybersecurity in I&C
IC6	Cybersecurity in Radiation Systems
IC7	Cybersecurity in Wireless Technologies
IC8	Cybersecurity Regulations, Standards, and Guidelines
IC9	Digital Twins and Their Applications
IC10	Diversity and Defense in Depth
IC11	Economics and Operation of Reactor Technologies
IC12	I&C and Cybersecurity Panels
IC13	I&C for Advanced Reactors and Small Modular Reactors
IC14	I&C for Integrated Energy Systems
IC15	I&C Regulations, Standards, and Guidelines
IC16	I&C System Reliability
IC17	Machine Learning and Artificial Intelligence for Nuclear
IC18	Other Topics in I&C and Cybersecurity
IC19	Reduced Order Models and Surrogates for I&C
IC20	Remote Operation, Monitoring, and Maintenance
IC21	Robotics for Nuclear Applications
IC22	Structural Health Monitoring
IC23	Theory and Applications of Large Language Models in Nuclear Energy
IC24	Verification, Validation, and Uncertainty Quantification
IC25	Wireless Technologies for Nuclear Facilities

HF. HUMAN FACTORS (HF)

HF1	Advances in HF Design and Analysis Methods
HF2	Computerized Procedures and Digital Instructions
HF3	HF Considerations for Artificial Intelligence and Machine Learning Systems
HF4	HF Considerations for Autonomy
HF5	HF Considerations for Balance of Plant
HF6	HF Considerations for Control Room Modernization
HF7	HF Considerations for Remote Operations, Monitoring, and Maintenance
HF8	HF Considerations for Verification and Validation
HF9	HF for Advanced Visualization, Operator Aids, and Support Systems
HF10	HF for Cybersecurity
HF11	HF for Novel Concepts of Operations
HF12	HF Operator Studies
HF13	HF Panels
HF14	HF Standards and Guidelines
HF15	Human-Automation Interaction
HF16	Human Performance Evaluation and Monitoring
HF17	Human Reliability Analysis
HF18	Human-System Interface and Alarm Design
HF19	Operating Experience
HF20	Other Topics in HF
HF21	Staffing and Qualification of Personnel
HF22	Task Analysis and Function Allocation
HF23	Workstation and Workplace Design

Track A, Abstract Option for Industry and Vendor Presentations

Note: The topics listed above are not the final session titles; they are provided just as a guide. The NPIC&HMIT 2025 Technical Program Committee will be happy to expand the areas and include new sessions into the program. Please contact the Technical Program Chair kangh6@rpi.edu to discuss new and alternative concepts.