

American Nuclear Society: 2010 Annual Meeting

June 13–17, 2010 • San Diego, California • Town and Country Resort

“Nuclear Science and Technology — The Right Fit. The Right Time”

and EMBEDDED TOPICAL MEETINGS:

- Second International Meeting of the Safety and Technology of Nuclear Hydrogen Production, Control, and Management (ST-NH2)
- Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors
- International Congress on Advances in Nuclear Power Plants (ICAPP '10)

(see last page for details)

SUMMARY DEADLINE: JANUARY 8, 2010



Call for Papers

CONFERENCE CHAIRS

General Chair

Ross T. Ridenoure, *Southern California Edison*

Technical Program Chair

Kurshad Muftuoglu, *GE Hitachi Nuclear Energy*

Assistant Technical Program Chairs

Larry Zull, *Defense Nuclear Facilities Safety Board*

Charlotta Sanders, *University of Nevada–Las Vegas*

Sarah Kleebe, *Southern California Edison*

DEADLINES: NO EXCEPTIONS

SUBMISSION OF SUMMARIES: November 1, 2009–January 8, 2010

AUTHOR NOTIFICATION OF ACCEPTANCE: By February 23, 2010

REVISED SUMMARIES DUE: March 9, 2010

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 and original Microsoft Word documents and the ANS Electronic Submission 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. Appendixes: If any, must be called out in the text. Equations, figures, and tables are listed with letters corresponding to each respective appendix.
5. References: If any, must be closely related published works. Minimize the number of references.
6. Do not present a bibliographical listing.

LENGTH

1. Use at least 450 words, excluding tables and figures.
2. Use no more than 900 words, including tables and figures.
3. Count tables and figures as 150 words each. Use no more than three tables or figures.
4. Limit title to ten words; limit listing authors to three or fewer if possible.
5. Exclude references from word count.

PAGE CHARGE

ANS charges \$100 per final printed page (prorated) 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 INFORMATION SERVICES

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ANS 2010 Annual Meeting: Session Titles by Division

(P) = Panel Session

1. Accelerator Applications (AAD)

- 1a. Nuclear Applications of Particle Accelerators: 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
- 3b. Food Irradiation—I
- 3c. Food Irradiation—II (P)

4. Decommissioning, Decontamination, and Reutilization (DDRD)

- 4a. Historic Preservation Considerations in Nuclear Facility Decommissioning (P)
- 4b. Unique Tooling
- 4c. Hot Topics and Emerging Issues

5. Education, Training, and Workforce Development (ETWDD)

- 5a. Education and Training: General
- 5b. Training, Human Performance, and Work Force Development
- 5c. Research by U.S. Department of Energy Sponsored Students
- 5d. Innovations in Nuclear Engineering Education, Training, and Distance Learning
- 5e. The Need for Nuclear Engineers with a Professional Engineering License
- 5f. The Bettis Reactor Engineering School

6. Environmental Sciences (ESD)

- 6a. Environmental Sciences: General
- 6b. Contributions of Nuclear Science and Technology to Sustainable Development
- 6c. Environmental Monitoring at Nuclear Facilities: Monitoring Results and Advances in Techniques
- 6d. Environmental Aspects of New Site Selection (P)
- 6e. Climate Change: Nuclear Power's Potential to Influence Climate Change

7. Fuel Cycle and Waste Management (FCWMD)

- 7a. MOX Fuel Fabrication Facility: Overcoming Supplier Qualification Challenges for the Nuclear Renaissance (P)
- 7b. Instrumentation to Assist in Verifying Compliance with Safeguards Commitments
- 7c. Identification of Criteria for Adequate Proliferation Resistance
- 7d. Numerical Methods for Nuclear Non-Proliferation and Safeguards Applications
- 7e. Fissile Material Cutoff Treaty (P)
- 7f. Conventional Forms of Fuel Pellet Sintering
- 7g. Hybrid Fission-Fusion Systems for Transmutation of Waste
- 7h. New Developments in Neutron Absorber Materials for Spent Fuel Storage (P)
- 7i. Solid Waste Recycling (P)
- 7j. New Developments in Advanced Fuel Cycles
- 7k. Waste Management Alternative

8. Fusion Energy (FED)

- 8a. Fusion Energy: General

9. Human Factors, Instrumentation, and Controls (HFICD)

- 9a. Sensors and Monitoring Systems in Nuclear Power Plants
- 9b. Human Factors, Instrumentation, and Controls: General

10. Isotopes and Radiation (IRD)

- 10a. Neutron Beam Technique Developments and Utilizations at Research Reactors
- 10b. Isotopes and Radiation: General

11. Mathematics and Computation (MCD)

- 11a. Transport Methods: General
- 11b. Computational Methods: General
- 11c. Mathematical Modeling: General
- 11d. Uncertainty Quantification in Nuclear System Modeling and Simulation
- 11e. Current Issues in Computational Methods—Roundtable/Panel

12. Nuclear Criticality Safety (NCSD)

- 12a. Data, Analysis, and Operations in Nuclear Criticality Safety
- 12b. Nuclear Criticality Safety Standards Forum
- 12c. Computational Advances in Criticality Safety Analysis
- 12d. Hazard Analysis of Nuclear Criticality Safety Evaluations—Tutorial—I
- 12e. Hazard Analysis of Nuclear Criticality Safety Evaluations—Tutorial—II

13. Nuclear Installation Safety (NISD)

- 13a. Lessons Learned from Efforts to Assess or Regulate Safety Culture
- 13b. Integration of ASME and ANS PRA Methodology Standards
- 13c. Highlights from Risk Management '09
- 13d. Generic Lessons Learned in NPP License Renewal
- 13e. Progress in Elevated Temperature Design
- 13f. Severe Reactor Accident Analysis
- 13g. Emerging Issues in Nuclear Facility Safety
- 13h. Current Issues in Reactor Safety
- 13i. Nuclear Installations Safety: General

14. Operations and Power (OPD)

- 14a. Challenges for New Plant Workforce Development and Training
- 14b. Advanced/Generation-IV Reactors
- 14c. The Global Nuclear Energy Partnership—Advances and Innovations
- 14d. Licensing of a Digital Upgrade
- 14e. Operations and Power: General

15. Radiation Protection and Shielding (RPSD)

- 15a. Radiation Protection and Shielding: General
- 15b. Computational Resources for Radiation Modeling
- 15c. Current Topics in Radiation Protection and Shielding—Roundtable (P)
- 15d. Modeling and Simulation Efforts for Nuclear Nonproliferation

16. Reactor Physics (RPD)

- 16a. Advances in Small- and Medium-Sized Reactor Designs
- 16b. Advances in Reactor Core Analysis Methods to Meet the Challenges of Next-Generation and Advanced NPP Designs
- 16c. Current Issues in LWR Core Design and Reactor Engineering Support (P)
- 16d. Reactor Analysis Methods
- 16e. Reactor Physics Design, Validation, and Operating Experience
- 16f. Reactor Physics: General

17. Thermal Hydraulics (THD)

- 17a. General Thermal Hydraulics
- 17b. Computational Thermal Hydraulics
- 17c. Computational Two-Phase Flow
- 17d. Scaling Analysis Techniques—Tutorial
- 17e. Regulatory Guide 1.157 Revisions (P)
- 17f. Thermal Hydraulics of VHTR
- 17g. Thermal Aspects of Nuclear Materials Processing, Handling, and Storage

18. Young Members Group (YMG)

- 18a. Highlights from the YMG2009 Embedded Topical Meeting
- 18b. Young Member Challenges: Knowledge Transfer (P)

ANS 2010 Annual Meeting: Technical Divisions

Accelerator Applications (AAD)

Denis Beller, bellerd@unlv.nevada.edu

Aerospace Nuclear Science and Technology (ANSTD)

J. Boise Pearson, J.Boise.Pearson@nasa.gov

Biology and Medicine (BMD)

Rolf Zeisler, rolf.zeisler@nist.gov

Decommissioning, Decontamination, and Reutilization (DDRD)

Nadia S. Glucksberg, nsglucksberg@mactec.com

Education, Training, and Workforce Development (ETWDD)

Peter F. Caracappa, caracp3@rpi.edu

Environmental Sciences (ESD)

Rebecca L. Steinman, rls@adventengineering.com

Fuel Cycle and Waste Management (FCWMD)

Paul P. Wilson, wilsonp@engr.wisc.edu

Fusion Energy (FED)

James P. Blanchard, blanchard@engr.wisc.edu

Human Factors, Instrumentation, and Controls (HFICD)

Tyrone S. Tonkinson, ttonkin@entergy.com

Isotopes and Radiation (IRD)

Kenan Ünlü, kxu2@psu.edu

Materials Science and Technology (MSTD)

Kenneth J. Geelhood, kenneth.geelhood@pnl.gov

Mathematics and Computation (MCD)

Todd Urbatsch, tmonster@lanl.gov

Nuclear Criticality Safety (NCSD)

A. Nichole Ellis, ellis_9899@msn.com

Nuclear Installations Safety (NISD)

Stephen Schultz, spschultz@duke-energy.com

Operations and Power (OPD)

Thomas A. Remick, thomas.remick@sce.com

Radiation Protection and Shielding (RPSD)

Charlotta E. Sanders, sander59@unlv.nevada.edu

Reactor Physics (RPD)

Fausto Franceschini, francef@westinghouse.com

Robotics and Remote Systems (RRSD)

Carl D. Crane, ccrane@ufl.edu

Thermal Hydraulics (THD)

Kurshad Muftuoglu, pcchair@thd-ans.org

Young Members Group (YMG)

A. Nichole Ellis, ellis_9899@msn.com

Embedded Topical Meeting: ST-NH2

EMBEDDED TOPICAL MEETING:

Second International Meeting of the Safety and Technology of Nuclear Hydrogen Production, Control, and Management (ST-NH2)

June 13–17, 2010 • San Diego, California • Town and Country Resort

EMBEDDED TOPICAL MEETING CHAIRS

Technical Program Co-Chairs

J. Stephen Herring, *Idaho National Laboratory*
Dana A. Powers, *Sandia National Laboratories*

The Second International Meeting on the Safety and Technology of Nuclear Hydrogen Production, Control, and Management (ST-NH2) will focus on two themes: the production of hydrogen using nuclear energy and the control/management of hydrogen in nuclear systems under both normal and accident conditions.

Under the production theme, papers are solicited for the following tracks:

1. Thermochemical processes
2. Hybrid production processes
3. Electrolysis, both conventional and high temperature
4. International programs for nuclear hydrogen production
5. Safety considerations in the operation of a hydrogen plant near a nuclear facility
6. Interface issues of nuclear and hydrogen systems

Under the control/management theme, papers are solicited on:

7. Production of hydrogen during accidents
8. Transport of hydrogen in nuclear reactor containments and other nuclear facilities
9. Mitigation of hydrogen by passive catalytic recombiners or other means
10. Experience, testing, and methodology applications for resolving issues in storage, processing, and transport of nuclear waste.

The meeting will have full-length technical papers, which will be peer-reviewed and published on a CD-ROM for distribution after the meeting. Papers of particular interest and of archival quality will be recommended for publication in a special issue of *Nuclear Technology*. At least one author is required to register for the meeting and to present his or her paper in English.

Authors should submit a 500-word, text-only abstract by December 14, 2009, along with contact information and preferred track number to www.ans.org/goto/st-nh2.

Embedded Topical Meeting: Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors

EMBEDDED TOPICAL MEETING:

Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors

June 13–17, 2010 • San Diego, California • Town and Country Resort

General Chairs

Todd Allen, *University of Wisconsin*

Lance Snead, *Oak Ridge National Laboratory*

Technical Program Chairs

Wolfgang Hoffelner, *Paul Scherrer Institute*

Heather MacLean, *Idaho National Laboratory*

Pascal Yvon, *Commissariat à l'Énergie Atomique*

Paper Deadlines

SUBMISSION OF SUMMARIES: November 1, 2009–January 8, 2010

AUTHOR NOTIFICATION OF ACCEPTANCE: By February 23, 2010

REVISED SUMMARIES DUE: March 9, 2010

Submit Summaries

Submit a summary at www.ans.org/meetings.

About the Meeting

The Generation IV International Forum is studying six advanced nuclear energy systems, projecting in-service and off-normal temperatures and neutron doses beyond current nuclear industry experience. Lifetimes of current light water reactors (LWRs) are being extended to 60 and possibly 80 years.

Fuels and materials that meet the requirements of extended lifetimes and high burnups for LWRs and Generation IV systems must be identified, and databases sufficient to support design and licensing must be established along with codes and standards for their use. The underlying science of materials under extreme conditions must be advanced using the capabilities of unique international radiation and corrosion testing facilities. This embedded topical will bring together fuels and materials experts to discuss the scientific and technical challenges facing current and future nuclear power systems.

Topics

1. Fuels and Materials for Very High Temperature Reactors (VHTR)
2. Fuels and Materials for Gas-cooled Fast Reactors (GFR)
3. Fuels and Materials for Supercritical Water-cooled Reactors (SCWR)
4. Fuels and Materials for Lead-cooled Fast Reactors (LFR)
5. Fuels and Materials for Sodium-cooled Fast Reactors (SFR)
6. Fuels and Materials for Molten Salt-cooled Reactors (MSR)
7. Fuels and Materials for Extended Lifetimes in Light Water Reactors (LWR)
8. Structural Materials for Fusion Reactors
9. Design (and Operation) Related Aspects of Advanced Nuclear Systems
10. Microstructural Modeling
11. Enabling Tools and Research Facilities

Embedded Topical Meeting: 2010 International Congress on Advances in Nuclear Power Plants (ICAPP '10)

EMBEDDED TOPICAL MEETING:

2010 International Congress on Advances in Nuclear Power Plants (ICAPP '10)

June 13–17, 2010 • San Diego, California • Town and Country Resort

Embedded Topical Meeting Chair

Technical Program Chair

Jacopo Buongiorno, *Massachusetts Institute of Technology*

Submit Abstracts

By October 15, 2009, authors should submit a one-page, 500-word abstract (text only) with contact information and preferred track number to www.icapp.ans.org/icapp10.

About the Meeting

Following the highly successful ICAPP 2009 meeting held in Tokyo, Japan, the 2010 International Congress on Advances in Nuclear Power Plants will bring together international experts of the nuclear industry involved in the operation, development, building, regulation, and research related to nuclear power plants.

The program will cover the full spectrum of nuclear power plant issues from design, deployment, and construction of plants to research and development of future designs and advanced systems. The program is expected to cover lessons learned from power, research, and demonstration reactors from over 50 years of experience with operation and maintenance, structures, materials, technical specifications, human factors, system design, and reliability.

This congress will have full-length technical papers, which will be peer-reviewed and published on a CD-ROM available at the meeting. Papers of archival quality will be recommended for publication in special issues of *Nuclear Science and Engineering* and *Nuclear Technology*.

All authors will be expected to present their papers in English at the congress. About 20 minutes will be allotted for each paper. At least one author is required to register for the congress and present their paper.