2018 International Congress on Advances in Nuclear Power Plants

April 8-11, 2018 | Charlotte, NC, USA | Westin

CALL FOR PAPERS

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SUMMARY DEADLINE: FRIDAY, DECEMBER 15, 2017

DECEMBER → SUBMISSION OF SUMMARIES: **Friday, December 15, 2017**
DECEMBER → AUTHOR NOTIFICATION OF ACCEPTANCE: **Tuesday, December 19, 2017**
JANUARY → DRAFT PAPERS: **Wednesday, January 5, 2018**
JANUARY → REVIEW NOTIFICATION: **Friday, January 19, 2018**
JANUARY → FINAL PAPERS/COPYRIGHT: **Wednesday, January 31, 2018**

SUMMARY SUBMISSION

By Monday, December 15, 2017 authors should submit a one-page 500 word summary to:
ans.org/meetings/c_2

CONFERENCE PURPOSE

The International Congress on Advances in Nuclear Power Plants (ICAPP) provides a forum for leaders of the nuclear industry to exchange information, present results from their work, review the state of the industry, and discuss future directions and needs for the deployment of new nuclear power plant systems around the world. ICAPP will gather industry leaders in several invited lectures in plenary sessions. This congress welcomes the submission of full-length technical papers, which will be peer reviewed and published. All authors will present their papers in English. About 20 minutes will be alloted for each paper. At least one author is required to register for the congress. ICAPP is an annual event, cosponsored by ANS, AESJ, KNS and SFEN and a number of major international nuclear societies. Since its inception in 2002, ICAPP has been held as an international embedded topical meeting during the annual meeting of the American Nuclear Society biannually, ICAPP is held in Europe and Asia during the years that it is not held in the United States. As of 2014, ICAPP became a stand alone meeting in the USA.

PAGE CHARGE

All full papers are limited to 10 pages. Any paper exceeding the ten-page limit will be charged a $100 fee per page.

SUBMIT A SUMMARY

ans.org/meetings/c_2

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TECHNICAL TRACKS

1. WATER-COOLED REACTOR PROGRAMS AND ISSUES
   Evolutionary designs, innovative, passive, light and heavy water cooled reactors; super critical water reactors; issues related to meeting near term utility needs; emerging plant safety issues, design improvements; business, political and economic challenges; infrastructure limitations and improved construction techniques including modularization.

2. HIGH TEMPERATURE REACTORS
   Design and development issues, components and materials, safety, reliability, economics, demonstration plants and environmental issues, fuel design and reliability, power conversion technology, impact of non electricity applications on reactor design; advanced thermal and fast HTR designs.

3. ADVANCED REACTORS
   Reactor technology with enhanced fuel cycle features for improved resource utilization, waste characteristics, and power conversion capabilities. Small Modular Reactor (SMR) development and licensing; potential reactor designs with longer development times such as liquid fuel reactors, Gen IV, INPRO, and GNEP.

4. OPERATION, PERFORMANCE AND RELIABILITY MANAGEMENT
   Reactor technology with enhanced fuel cycle features for Training, O&M costs, life cycle management, risk based maintenance, operational experiences, performance and reliability improvements, outage optimization, human factors, plant staffing, outage reduction features, major component reliability, repair and replacement, in-service inspection, and codes & standards.

5. PLANT SAFETY ASSESSMENT, REGULATORY AND LICENSING ISSUES
   Transient and accident performance including LOCA and non-LOCA, severe accident analysis, nuclear plant security, natural disaster initiated severe accidents, impact of risk informed changes, accident management and emergency situations, advances in regulatory issues for operating and future plants, life assessment and management of aging, degradation and damage extension lessons from plant operations, containment with radiological and nonradiological inventory, probabilistic safety assessment and reliability engineering, new methodologies for plant safety analysis. Fire protection, emergency preparedness, and used fuel storage and transportation. Reactor licensing, advanced reactor design certification, combined license, and multinational design license application and evaluation.

6. REACTOR PHYSICS AND ANALYSIS
   Nuclear data libraries and related error files, lattice calculation, deterministic and Monte Carlo approaches, core calculation, multi physics coupling. Progresses achieved in this domain contribute to the improvement of core performances (for existing reactors and next generation reactors). New fuels, new fuel management, new reactor cores (i.e. pebbled bed generation reactors) and characterization of spent fuels.

7. THERMAL HYDRAULICS ANALYSIS AND TESTING
   Experimental techniques and measurements, phenomena identification and ranking, computer code scaling applicability and uncertainty, containment thermal hydraulics, separate and integral effect tests, improved code development and qualification, single and two phase flow heat transfer, advanced computational thermal hydraulic methods; single and two phase CFD.

8. FUEL CYCLE AND WASTE MANAGEMENT
   TRU separation processes, fuel and target design for transmutation, performances, scenarios for P&T deployment, review of national programs on P&T, impact of P&T on waste minimization, advanced reprocessing processes and technologies (Purex, Coex, Urex, Pyro), nuclear material recycling technologies (MIMAS, Vibropack), modeling of processes, back end fuel cycle options, uranium and plutonium management issues, waste conditioning storage and disposal, thorium cycle, fully integrated fuel cycle and symbiotic nuclear power systems, Accelerator Driven Systems (ADS), Fuel supply and waste management and non-proliferation concerns

9. MATERIALS AND STRUCTURAL ISSUES
   Fuel, core, reactor pressure vessel and internals structures, advanced materials issues, environmental effects and fracture mechanics, concrete and steel containments design and analysis, design and monitoring for seismic, dynamic and extreme accidents, irradiation issues, materials and structural mechanics issues, aging material issues, codes and standards for new generation plants.

10. NUCLEAR ENERGY AND GLOBAL ENVIRONMENT
    Environmental impacts and carbon reduction of nuclear and alternative systems, including applications such as the production of hydrogen, sea water desalination, liquid fuels produced with reduced carbon footprints, biofuels, heating and other co-generation applications. Scenario analysis of nuclear role substitution for fossil fuels not only for power but for transportation, and its qualitative contribution. International collaborative arrangement to support world nuclear energy development, especially in developing countries and with respect to fuel supply and waste management and non-proliferation concerns.