Radiation Safety Information Computational Center

Oak Ridge National Laboratory
POST OFFICE BOX 2008
OAK RIDGE, TENNESSEE 37831-6171

Managed by
UT-Battelle, LLC
for the U.S. Department of Energy
under contract DE-AC05-00OR22725

phone 865-574-6176 fax 865-241-4046
email PDC@ORNL.GOV
www http://rsicc.ornl.gov/

No. 502 **December 2006**

The dignity of man is vindicated as much by the thinker and poet as by the statesman and soldier.—Dr. James B. Conant

RSICC will observe the holiday season beginning December 22, 2006, through January 2, 2007. RSICC will be happy to respond to your requests upon return.

Merry Christmas and Happy 2007!

The RSICC Staff

US Signs ITER Agreement

On November 21, 2006, the U.S., represented by Dr. Raymond L. Orbach, Under Secretary for Science of the U.S. Department of Energy (DOE), signed an agreement with the European Union, India, Japan, the Republic of Korea and the Russian Federation to build the international fusion energy project known as ITER.

"Signing this agreement brings us one step closer to a viable source of fusion power," Dr. Orbach said. "ITER also is the first stand alone, truly international, large-scale scientific research effort in the history of the world. It will surely serve as a model for future collaborative large scale science projects," he added.

"The energy that powers the stars is moving closer to becoming a new source of energy for the Earth through the technology represented by ITER," U.S. Secretary of Energy Samuel W. Bodman said. "The ITER Members represent over half of the world's population. The U.S. is proud to be part of this partnership, and to join in the pursuit of nuclear fusion as a source of clean, safe, renewable and commercially deployable energy for the future."

With the potential to become a long-range option for clean energy, fusion energy is an important component of the U.S. Advanced Energy Initiative (AEI). The President has requested $60 million for the ITER project in FY 2007, an increase over the FY 2006 DOE allocation of $25 million.

ITER will be constructed at Cadarache, France, adjacent to the main research center of the French Atomic Energy Commission, and is expected to be completed in 2015. The U.S. contribution to ITER will consist of about 80 percent in-kind components, and about 20 percent in cash to a central fund and for personnel assigned to the project at the ITER site. DOE laboratories will subcontract with industry to build the components of ITER for which the U.S. is responsible. The total value of the U.S. contribution is $1.122 billion.

http://www.energy.gov/news/4486.htm, December 1, 2006

Changes to the Computer Code and Data Collection

CCC-522/VARSKIN 3 Version 3.0.1

The Center for Nuclear Waste Regulatory Analyses, Southwest Research Institute, San Antonio, Texas, and the U.S. Nuclear Regulatory Commission contributed a newly frozen version of this code system to calculate the radiation dose (gamma and beta) to skin from radioactive contamination of skin or protective clothing. The new code, VARSKIN 3 Version 3.0.1, contains corrections and enhancements over the previous version. VARSKIN3 operates in a Windows environment and is designed to be significantly easier to learn and use than VARSKIN Mod 2 on which it is based. Six different predefined source configurations are available: point, disk, cylinder, sphere, slab, and syringe. Improvements in

VARSKIN 3 include a backscatter correction for three-dimensional sources, an upgraded gamma dose model, air gap and cover material models. The default area for skin dose calculations has been changed to 10 cm^2 to conform to a recent regulatory requirement pursuant to 10 CFR 20.1201(c), but the area can be changed by the user. A variety of unit options are provided, including both English and System International units, and the source strength can be entered in units of activity or distributed in units of activity per area or activity per volume. The input data file for VARSKIN Mod 2 was modified to reflect current physical data, to include the contribution to dose from internal conversion and Auger electrons, and to reflect a correction for low-energy electrons. In addition, the computer code SADDE (Scaled Absorbed Dose Distribution Evaluator) Mod 2, is incorporated into VARSKIN 3, thus eliminating the need for additional input from the user. A help file that includes all of the information from the NUREG document, in addition to a tutorial, has also been added to the code package. The package is transmitted on a CD which includes the referenced document and Fortran and Basic source files, Windows executables, built-in data libraries and on-line help. Reference: NUREG/CR-6918 (2006). Fortran and Visual Basic; Pentium (C00522PC58605).

PSR-536/ FEMAXI-6/RODBURN

Nuclear Safety Research Center, Japan Atomic Energy Agency, Tokai-mura, Naka-gun, Ibaraki-ken, through the Research Organization for Information Science & Technology (RIST), contributed a new release of this code system for light water reactor fuel analysis. This package includes FEMAXI-6 Version 1 (U), RODBURN 1.2, and EXPLOT, which can be used to view FEMAXI-6 output.

FEMAXI-6 Version 1 (updated) predicts the thermal and mechanical behavior of a light water reactor fuel rod during normal and transient (not accident) conditions. It can analyze the integral behavior of a whole fuel rod throughout its life as well as the localized behavior of a small part of a fuel rod. Temperature distribution, radial and axial deformations, fission gas release, and inner gas pressure are calculated as a function of irradiation time and axial position. Stresses and strains in the pellet and cladding are calculated and PCMI analysis is performed. Also, thermal conductivity degradation of pellet and cladding waterside oxidation are modeled. Its analytical capabilities also cover the boiling transient anticipated in BWR.

RODBURN 1.2 calculates the power generation density profiles in the radial and axial directions and fast neutron flux, and concentrations of fission product isotopes and fissile materials of a single rod irradiated in PWR, BWR and Halden BWR. RODBURN gives an output file which can be read by FEMAXI-6.

FEMAXI/RODBURN runs on Intel Windows personal computers under the Windows XPSP2 operating system. Executables created by the authors are included in this package. Compaq Digital Visual Fortran 6.1 or newer can be used if the user wishes to recompile. Adobe Acrobat 4 or higher with Japanese fonts is required to view the report and some output files. The package is transmitted on a CD that includes the referenced document and a self-extracting, compressed Windows file which contains the Fortran source files, PC executables, data files, and test case input and outputs. Reference: JAEA-Data/Code 2005-003 (2006). Fortran 77; Pentium personal computers (P00536IBMPC00).

ANS News

American Nuclear Society Names Three New Fellows

During the American Nuclear Society (ANS) Winter Meeting, held in Albuquerque, New Mexico, three nuclear professionals were honored as new ANS Fellows. The society's highest honor as a Fellow recognizes each individual's extraordinary leadership within the society and acknowledges their major contributions to the nuclear field. They are:

Cecil V. Parks, group leader of Nuclear Systems Analysis, Design, and Safety in the Nuclear Science and Technology Division of Oak Ridge National Laboratory in Tennessee, for exceptional technical leadership in guiding the development of the SCALE (Standardized Computer Analyses for Licensing Evaluation) code system from a prototypic to a rigorous and robust system used world-wide for fuel cycle and reactor analyses, and for his contributions to developing consensus solutions to important nuclear safety problems.

Cetin Unal, a staff member for Los Alamos National Laboratory in New Mexico, for his outstanding and original contributions in developing a phenomenological model of thermal-hydraulics convective boiling of hot rod bundles during the quenching of the bundles (reflood model) based on new hydrodynamic and heat transfer data and implementing it into the TRAC code, and for his significant efforts to resolve the Hanford flammable gas safety issue.

Belle R. Upadhyaya, a professor in the Department of Nuclear Engineering at the University of Tennessee, for outstanding and original research contributions in: nuclear reactor monitoring and diagnosis; signal validation, fault detection and isolation of field devices, fault tolerant control methods, and advanced signal processing for structural integrity monitoring of steam generators; and for his leadership in establishing the University of Tennessee Maintenance and Reliability Center.

These three nuclear leaders join the elite group of ANS Fellows listed on the ANS webpage at http://www.ans.org/honors/fellows/.

http://www.ans.org/pi/media/releases/r-1163525097

Larson Receives Oestmann Award

Nancy Larson was selected to receive the Mary Jane Oestmann Professional Women's Achievement Award for technical leadership in the nuclear data field and her lifetime achievement of sustained technical contributions to the advancement of nuclear technology. She has performed research and development in computational nuclear physics at ORNL for 34 years. As an NSTD Distinguished Staff Member and sole developer of the SAMMY R-matrix analysis software, Nancy has made tremendous technical contributions to the nuclear data field that have advanced the state of the art in radiation transport modeling and simulation. The Oestmann Award was established to recognize outstanding personal dedication and technical achievement by a woman for work performed in the fields of nuclear science, engineering, research, or education.

NJOY Users

The Proceedings including Summary / Conclusions of the NJOY User group meeting, held on 20 November 2006 can be found at http://www.nea.fr/html/dbprog/Njoy/njoy-issy-06.html. The URL of the NJOY Web links is http://www.nea.fr/html/dbprog/njoy-links.html. We would like to thank all the participants for attending, making presentations and contributing to the discussion.

Enrico Sartori & Andrej Trkov

Trubey Recalls Early Days

David K. Trubey was a part of the Radiation Safety Information Computational Center from its inception in 1962 until he retired in June 1991. Dave died July 11, 2003. I joined the Radiation Safety Information Computational Center in 1982 to take over the publication of the newsletter. That January 1982 issue was the first edition published using the new ORNL Aps μ5 phototypesetter. Dave and Bill Griffith couldn't have been more patient with a complete novice to the command language used to typeset

the newsletter. An excerpt from some notes Dave made in 1991 about his early career at Oak Ridge National Laboratory follows.

As I recall, it was the summer of 1962 that I first learned about plans for a shielding information center which eventually became RSIC. It was during a break during a division information meeting, and I was talking with Phil Hemmig of the USAEC. Blizard appointed Keith Penny the head of the shielding information center. Keith and I were in the same office, and we began making plans. There seemed to be two immediate tasks: one was the development of a computer-based information retrieval system, and the other was the collection of software. We were aware of computing technology that was being developed, and it was apparent that we should be collecting and testing software. We had already done that to some extent. We had obtained the codes NIOBE and RENUPAK from United Nuclear…..

Keith and Betty Maskewitz had implemented the NIOBE code on the K-25 computer, and so we were building up a capability to do transport calculations. I recall a request from Japan prompted us to send NIOBE to Japan, and I remember there were many problems that Japanese researchers had with NIOBE. About this time Betty Maskewitz came over from K-25 for an interview, and I remember Betty coming into the office to discuss prospects of what became RSIC. She was assigned the office that Blizard called Baker Street Irregulars, based on the Sherlock Holmes youngsters who provided him with a variety of information. I remember that great box from General Electric that was parked on Betty's desk containing all the codes from the GE ANP operation which was being terminated.

From left: R. W. Roussin, Betty Maskewitz, and Dave Trubey.

Dave's notes are too long to include here: I hope you will take the time to read the unabridged version linked here.

CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users and contributors advised of conferences, courses, and symposia in the field of radiation protection, transport, and shielding through this section of the newsletter. Should you be involved in the planning/organization of such events, feel free to send your announcements and calls for papers via email to riceaf@ornl.gov with "conferences" in the subject line by the 20th of each month. Please include the announcement in its native format as an attachment to the message. If the meeting is on a website, please include the url.

Every attempt is made to ensure that the links provided in the Conference and Calendar sections of this newsletter are correct and live. However, the very nature of the web creates the possibility that the links may become unavailable. In that case, please call or mail the contact provided.

MCNPX Workshops

Lead Teachers: Drs. John Hendricks, Gregg McKinney, Laurie Waters
Organizer: HQC Professional Services
Contact: bill@mcnpxworkshops.com
Information: http://mcnpxworkshops.com and MCNPX homepage: http://mcnpx.lanl.gov

2007 Schedule		
Jan. 8–12	Las Vegas, NV	Advanced

Jan 29–Feb 2	Paris, France	Introductory
Mar 12–16	San Francisco, CA	Intermediate
Apr 30–4 May	Honolulu, HI	Introductory
June 4–8	Santa Fe, NM	Introductory
Sept 17–21	Santa Fe, NM	Advanced
October 22–26	Europe	Intermediate

MCNPX is packed with new and exciting plotting features, including numerous mesh tally options which can be superimposed on your geometry plot and plotted within the MCNPX run, eliminating the need for post-processing and costly additional plotting package(s). You can plot particle flux, tracks, dosage, and energy deposition as well as source points and many others.

The workshops include hands-on instruction, generally on PC Windows machines. Subject to participant export approval from the MCNPX beta test team, participants will be able to access the Fortran 90 version of MCNPX 2.6, the LA150 (150 MeV) cross-section data libraries for over 40 isotopes for incident neutrons and protons and 12 for photonuclear interactions, and a notebook of viewgraphs.

Follow-up consultation for class participants will be provided.

The classes are taught by experienced MCNPX code developers and instructors. More information on code versions and capabilities is available at MCNPX Workshops web site http://mcnpxworkshops.com.

To register go to http://mcnpxworkshops.com/regform.html.

Spring 2007 SCALE Training Courses at ORNL

Spring 2007 SCALE Training Courses at ORNL		
Date	**Title**	**Description**
March 5–8	**TSUNAMI Sensitivity/ Uncertainty Tools Course** (Experienced KENO users only)	1-D and 3-D sensitivity/uncertainty analysis using XSDRNPM and KENO V.a
March 12–16	**ORIGEN-ARP/ TRITON Course**	ORIGEN-ARP: Isotopic depletion/decay and source terms using latest version of ORIGEN TRITON: 2-D reactor physics analysis using NEWT
March 19–23	**KENO-VI Course**	Criticality safety using the generalized geometry version of KENO

The registration fee is $1800 for each course. A late fee of $300 will be applied for late registrations. A discount of $300 per each additional week will be applied for registration to multiple courses. **Class size is limited and course may be canceled if minimum enrollment is not obtained one month prior to the course**. Course fees are refundable up to one month before each class. **Note that all attendees must be registered SCALE 5 or 5.1 users.** All foreign national visitors must register 40 days prior to the start date of the training course they plan to attend. Course descriptions may be found at http://www.ornl.gov/sci/scale/course_description.htm.

Conference on Nuclear Training and Education (CONTE III)

CONTE III is an ANS Topical Conference which will be held in Jacksonville, Florida, February 4–7, 2007. The program supports the conference mission to be an "international forum on nuclear energy training and education and workforce issues facing a renewed nuclear energy option." The program track includes:

- Human Performance Improvement
- Workforce Planning/Recruiting/Diversity
- Personnel Training/Qualification/Education
- Knowledge Retention
- New Educational Partnerships – University/Industry/Government
- Engineering Education – Distance Learning
- Leadership Development/Succession Planning
- International Perspectives

Relevant conference information is posted at http://www.ans.org/meetings/calendar.cgi?d=2-4-2007.

33rd Waste Management Conference

The 33rd Waste Management Conference (WM'07) will be held February 25–March 1, 2007, in Tucson, Arizona. The conference is organized by WM Symposia, Inc., an Arizona non-profit corporation, and hosted by the University of Arizona. Sponsoring organizations include the American Nuclear Society, the American Society of Mechanical Engineers, New Mexico State University Waste-Management Education and Research Consortium (WERC) and OECD/NEA. The conference is also organized in cooperation with the US Department of Energy (DOE), Nuclear Regulatory Commission (NRC), Environmental Protection Agency (EPA) and International Atomic Energy Agency (IAEA). Information relevant to the conference is available on the website (http://www.wmsym.org/).

PHYTRA1

The First International Conference on Physics and Technology of Reactors and Applications (PHYTRA1) will be held March 14–16, 2007, in Marrakech City, Morocco. This is the first International Conference organized by the Moroccan Association for Nuclear Engineering and Reactor Technology "GMTR" after a series of three national conferences. The objective is to provide scientists and engineers from different countries an opportunity to present their recent work in reactor physics and nuclear technology. Industrial vendors may exhibit their products and innovations in different domains related to reactor physics and nuclear technology. The PHYTRA1 conference will also be a celebration for the operation of the first research reactor (TRIGA Mark II) in Morocco which is expected to be commissioned in 2006.

Conference topics include:

- Deterministic and Monte Carlo Transport Theory Methods
- Reactor Core and Lattice Physics Methods
- Physics and Computational Methods for Advanced Reactors
- Reactor Theory and Reactor Concepts
- Neutron Kinetics and Dynamics
- Criticality and Safety Analysis
- Fuel Loading Optimization and Fuel Design
- Nuclear Data Analysis and Methods
- Computer Codes and Benchmarks

- Computational Methods for Research Reactors
- High Temperature Reactor Physics and Methods
- Reactor Thermal Hydraulics
- Radioactive Waste Management
- Research Reactor Utilization
- Reactor Dosimetry and Reactor Shielding

Information on the conference can be found at the website, http://www.fst.ac.ma/gmtr/phytra1/phytra1.html, or by contacting Pr. A. Jehouani, Faculty of Sciences SEMLALIA, Dept. of Physics, University Cadi Ayyad- Marrakech, Morocco (email PHYTRA1@fsr.ac.ma or jehouani@ucam.ac.ma, fax 212-44-43-74-10) or Pr. L. Erradi, GMTR President, Mohammed V Agdal University, Faculty of Sciences, Department of Physics, B. P. 1014 Rabat, Morocco (email erradi@fsr.ac.ma or fax 212-0-37-77-89-73).

National Physical Laboratory (UK) Hosts Two MC Events

The National Physical Laboratory (NPL) will host two Monte Carlo events in March 2007. The International Workshop on Monte Carlo Codes, a two-day workshop devoted to some of the most popular Monte Carlo radiation transport codes, will be held at NPL on March 26–27, 2007. It will include sessions on the following codes: EGSnrc, Geant4, MCNPX, and PENELOPE. Presentations will cover the important features, capabilities and recent developments of each code, as well as one or more demonstrations of real applications. There will also be several introductory lectures on general Monte Carlo techniques for novice users that are applicable to all radiation transport codes. At the end of the first day, there will be a session during which delegates may demonstrate their own applications and problems.

The workshop will be followed by the 13th UK Monte Carlo User Group Meeting (MCNEG 2007) March 28–29. The MCNEG 2007 meeting will provide delegates with the opportunity to present and discuss their applications and recent developments of Monte Carlo in radiotherapy, radiation protection, radioactivity, the nuclear and other industries. The meeting format will encourage extensive discussion and feedback on recent topics in these areas of Monte Carlo. The meeting will include several talks from the invited speakers on recent Monte Carlo topics, presentations by delegates on submitted topics, and tours of the new state-of the-art radiation facilities at NPL.

Questions regarding the Monte Carlo workshop and MCNEG 2007 may be directed to one of the local organisers: David Shipley (phone +44 (0) 20 8943 6252, fax +44 (0) 20 8943 6070, email david.shipley@npl.co.uk), Mark Bailey (phone +44 (0) 20 8943 6797, fax +44 (0) 20 8943 6070, email mark.bailey@npl.co.uk) or Alan DuSautoy (phone +44 (0) 20 8943 6563, fax +44 (0) 20 8943 6070, email alan.dusautoy@npl.co.uk). Relevant information for both events can be found at http://www.npl.co.uk/ionrad/training/montecarlo/. Mail can be sent to National Physical Laboratory, Hampton Road, Teddington, Middlesex, United Kingdom TW11 0LW.

M&C + SNA 2007

The Joint International Topical Meeting on Mathematics & Computations and Supercomputing in Nuclear Applications (M&C+SNA) will be held April 15–19, 2007, in Monterey, California. The conference will provide an international forum to review recent research results, and the status and trends in high performance computing, numerical simulation and physical modeling of current and advanced nuclear systems. Topics include:

- Computational Methods Using High Performance Computers
- Computational Reactor Physics and Particle Transport
- Nuclear Reactor Analysis

- Computational Biomedical Applications
- Computational Nuclear Fuel Cycle/Repository Performance
- Computational Plasma Physics/Fusion
- Computational Thermal Hydraulics
- Computational Materials Sciences
- Computational Science
- Planned Special Sessions
  - Domain Representation for Advanced Nuclear Applications
  - Nuclear Methods for Nonproliferation and Homeland Security
  - Analytical Benchmarks
  - Tomographic Phantoms
  - Stochastic Considerations in Particle Transport

Program, registration, and other significant information about the conference may be found at the website, http://mc-sna07.nuc.berkeley.edu/. General questions about the conference may be addressed to mcinfo@nuc.berkeley.edu and questions regarding the program should be submitted to vujic@nuc.berkeley.edu.

ND2007

The International Conference on Nuclear Data for Science and Technology will be held April 22–27, 2007, in Nice, France. The conference is organized by the Commissariat à l'Énergie Atomique (CEA) under the auspices of the OECD Nuclear Energy Agency (NEA). The General Chairs are B. Bigot, Haut-commissaire à l'Énergie Atomique and L. Echávarri, NEA Director-General. The technical program includes the following topics:

- Nuclear structure and decay data
- Experimental facilities and detection techniques
- Nuclear data measurements and analysis
- Nuclear theories, models and data evaluation
- Standards
- Evaluated nuclear data libraries and processing
- Validation, benchmarking of evaluated data
- Integral experiments
- Uncertainties quantification
- Data dissemination and international collaboration
- Fission energy applications
- Accelerator-related applications
- Fusion technology applications
- Dosimetry and shielding applications
- Safeguards and security
- Space, cosmic-ray applications, radiation effects on electronics
- Astrophysics and cosmology applications
- Medical and environmental applications

The most current information will be posted on the website at http://www-dapnia.cea.fr/Sphn/nd2007/site_nd2007/ and questions or comments may be addressed to nd2007@cea.fr.

WIN Global 2007

The Women in Nuclear (WIN) Global Conference 2007 will be held in Bali, Indonesia, April 22-27, 2007. Bookmark http://win-global.org/ and check it often for details of the conference. Begin now to plan and budget to attend this important conference.

International Conference on Emerging Nuclear Energy Systems (ICENES 2007)

The committee for the 13th International Conference on Emerging Nuclear Energy Systems (ICENES 2007) has issued a call for papers for the conference to be held June 3–8, 2007, at Gazi University in Istanbul.

The main objective of ICENES is to provide a broad review and discussion of various advanced, innovative and non-conventional nuclear energy production systems to scientists, engineers, industry leaders, policy makers, decision makers and young professionals who will shape future energy supply and technology. ICENES 2007 will also open the forum to innovative non-nuclear technologies, such as hydrogen energy, solar energy, deep space exploration, etc. with an emphasis on *unthinkable ideas* with a sound scientific-technical basis. The program will include invited papers, submitted contributions in oral and poster sessions, as well as an industrial exhibition and social tours. Topical areas include:

- Advanced Fission Systems
- Fusion Energy Systems
- Accelerator Driven Systems
- Exotic Nuclear Reactor Concepts
- Transmutation and Fuel Cycle
- Co-Generation and Non-Electricity Production Applications
- Generation IV Reactors
- Space Power and Propulsion
- Deep Space Exploration, general
- Nuclear Hydrogen Production
- Radiation Protection & Shielding
- Hydrogen Energy, general including non-nuclear applications
- Solar Energy
- Other Alternative Energies
- Societal Issues

The official language of the conference will be English. The proceedings will be produced on an interactive CD-ROM with an ISBN registration number. A selection of ICENES 2007 papers will be published in a special edition of the journal *Energy Conversion & Management*. Scientific and technical inquiries may be directed to Prof Dr. Sümer Şahin, Gazi University 06500 ANKARA/TURKEY (phone +90 (312) 212 43 04, fax +90 (312) 212 43 04, email sumersahin@icenes2007.org). Updated information will be posted to http://www.icenes2007.org/.

ANS Call for Papers

The organizing committee has issued the call for papers for the 2007 Annual Meeting to be held June 24–28, 2007, in Boston. The meeting theme is "It's all About the People: The Future of Nuclear." The meeting is organized around the following tracks:

1. Meeting Theme—It's All About the People: The Future of Nuclear
2. Nuclear Power and New Construction of Nuclear Systems
3. Fuel Cycle, Waste Management, and Decommissioning Technologies
4. Nuclear Facility and Criticality Safety
5. Environmental Science and Technologies
6. Medical and Nonpower Applications of Radiation
7. Nuclear Science and Engineering
8. Advanced Energy Research and Emerging Technologies
9. Education, Training, and Communication with the Public
10. Nuclear Nonproliferation and Security
11. Professional Development

Session Organizer for "Sensitivity, Uncertainty, and Parameter Estimation Methodologies in Nuclear Systems Modeling," Dr. Hany S. Abdel-Khalik, invites summaries to this special ANS session which

recognizes the need for the development of advanced sensitivity and uncertainty analyses for analyzing existing and innovative reactor systems, particularly those of interest to the GNEP (Global Nuclear Energy Partnership) program where little experience is currently available. The objective of this session is to review and present the latest advances in the application of sensitivity, uncertainty, and parameter estimation methods to the various disciplines on which the different modeling stages of the fuel cycle are based, including material science, radiation transport, thermal-hydraulics, structural analysis, chemistry, repository performance, partitioning and separation, etc. Researchers and scientists from other communities are also encouraged to contribute to this special session in order to exchange knowledge and capabilities developed in various fields.

Summaries of 450–900 words using the ANS Template and "Guidelines for *TRANSACTIONS* Summary Preparation" may be submitted between November 1, 2006 and January 12, 2007. 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. Summary guidelines and templates can be found at http://www.ans.org/pubs/transactions/; summaries are to be submitted to http://www.ans.org/meetings/.

Space Nuclear Conference 2007 (SNC '07)

The second topical meeting organized by the Aerospace Nuclear Science and Technology (ANST) technical group, Space Nuclear Conference 2007 (SNC '07), will take place June 24–27, 2007, in Boston. NASA funding has been established to develop capabilities for unmanned and manned missions to the moon, Mars, and beyond. Strategies implementing nuclear based power and propulsion technology, as well as radiation shielding protection, will be an integral part of these missions.

The purpose of the meeting is to bring together research and management personnel from government, industry, academia, and the national laboratory system and provide a forum for information exchange for those who are involved in space projects. The meeting will include topics ranging from overviews of current programs and plans to detailed issues related to space travel, such as nuclear-based power and propulsion systems designs, materials, testing, safety, space environmental effects and nuclear power system radiation shielding for humans and electronic components, and human factor strategies for the safe and reliable operation of nuclear power and propulsion plants. Full-length, peer-previewed technical papers will be published on a CD which will be available at the conference. The call for papers and other information relevant to the conference is available at the website, http://www3.inspi.ufl.edu/space07/, or contact Lynne Schreiber, Conference Administrator, (phone 352-392-9722, fax 352-392-8656, email space@ans.org).

AccApp'07

The jointly sponsored ANS/IAEA International Conference on Applications and Utilization of Accelerators (AccApp'07) to take place in Pocatello, Idaho, on July 30-August 2, 2007, will be hosted by Idaho State University and the Idaho Accelerator Center. There will be plenary sessions and a separate embedded Accelerator-Driven Subcritical System Experiments Workshop of five sessions. The website, http://www.iac.isu.edu/accapp07/, is prepared to accept abstracts for the meeting; the deadline for submission is February 15. Program topics are listed in the following table and instructions for submitting abstracts can be found at the website. The general chair of the meeting is Dr. Denis Beller (University of Nevada, Las Vegas). Questions or comments should be directed to the Conference Administrator, Ms. Nikki Iwert-Bays of the Idaho National Laboratory (Nikki.Iwert-Bays@inl.gov@inl.gov), who will direct your question to the responsible individual.

AccApp'07 Call for Papers Subject Areas		
High-power Accelerator Operations: • Operational Experience • Beam Interface Issues • Instrumentation & Controls • Shielding • Remote Handling • Health Physics & Dosimetry • Waste Management **Systems Engineering & Integration:** • Accelerator Driven System (ADS) Simulations • ADS Experiments • Design Optimizations • Reliability Analysis • Cost Estimating & Economics	**Applications:** • Spallation Neutron Sources • Industrial Applications • Accelerator Mass Spectrometry • Medical Imaging and Therapy • Nuclear Waste Transmutation • Energy Production • Environmental Applications • Food Safety • Free Electron Lasers • Portable Accelerators • Radioisotope Production • Inspection Technology for Explosives and Fissile Materials • Radiation Damage and Biological Effects • Imaging and Advances in Detectors	**Other:** • Neutronics Calculations • Codes and Models for Beam Transport and Experiment Validation • Nuclear Data • Photonuclear Cross Sections • Safety and Source Term • Subcritical Assembly Design • Transmutation fuels • Separations Technologies • Target Engineering • Materials for Accelerator Applications • Long-lived Fission Product Transmutation • Accelerator-driven University Neutron Sources • Positron Annihilation Spectroscopy

Global '07

The main focus of Global '07 will be "Advanced Nuclear Fuel Cycles and Systems." The conference, to be held September 9–13, 2007, in Boise, Idaho, is jointly sponsored by the Idaho National Laboratory, American Nuclear Society, Idaho Section of American Nuclear Society, European Nuclear Society and Atomic Energy Society of Japan. Summaries are due January 26, 2007, and should support the conference topics which are:

- Advanced Integrated Fuel Cycle Concepts
- Spent Nuclear Fuel Reprocessing
- Advanced Reprocessing Technology
- Advanced Fuels and Materials
- Advanced Waste Management Technology
- Novel Concepts for Waste Disposal and Repository Development
- Advanced Reactors
- Partitioning and Transmutation
- Hydrogen Production with Nuclear Energy
- Developments in Nuclear Nonproliferation Technology, Policy, and Implementation
- Sustainability and Expanded Global Utilization of Nuclear Energy
- International Cooperation on Nuclear Energy

Conference and registration information is posted to http://nuclear.inel.gov/global07/index.shtml.

Regional Congress for Central and Eastern Europe

The International Radiation Protection Association (IRPA) Regional Congress for Central and Eastern Europe will be held in Brasov, Romania, September 24–28, 2007. It will be organized by the Romanian Society for Radiological Protection (RSRP). This Regional Congress will present an opportunity to debate those subjects which will determine the future of this specialty, ranging from the science of biological radiation effects to the regulation and practice of radiation protection, which includes the control of natural, occupational and medical exposures, the development of the radiological protection system, protection against non-ionizing radiation and the participation of the public. The Congress technical program will be led by renowned experts as invited speakers, with refresher courses and poster sessions, some of which will be selected for oral presentations. There will be an IRPA Associated Societies Forum and a Technical Exhibition, and the Third Workshop of the Regional East European and Central Asian Countries ALARA Network, which is supported by the IAEA, will take place during the same period. Topics include:

- Radiation biology
- Health effects of ionizing radiation
- Radiological protection infrastructure, regulation and policy
- From legal requirements to practical regional aspects
- Dosimetry and instrumentation
- Education and training
- Radiation protection at workplaces
- Radiation protection of patients
- Radiation protection, environment and public
- Waste management and treatment
- Decommissioning and site remediation
- Incidents, accidents and post accident
- Non-ionizing radiations
- Radiation protection and safety in nuclear fuel cycle

Complete and updated information can be found at http://www.irpa2007romania.com/.

CONRAD-WP4

The European Radiation Dosimetry Group (EURADOS) is sponsoring the CONRAD WP4 workshop on "Uncertainty Assessment in Computational Dosimetry: A Comparison of Approaches." The workshop will be held in Bologna, Italy, October 1–3, 2007. The aims of the workshop are to discuss the results of a questionnaire on the expression of uncertainties in dosimetry measurements and calculations and to present contributions of general relevance within the scope of the WP4 action. Summaries of the results will be presented together with oral and poster communications by the participants on the following topics:

Recoil-proton telescope detector
Bonner sphere spectrometer
Sigma simulated workplace neutron field
Photon irradiation facility
Manganese bath
Iron sphere experiments
Energy response characteristics of a RadFET radiation detector
Recoil-proton telescope detector; sensitivity and uncertainty analysis

The workshop chairman is Dr. Gianfranco Gualdrini, ENEA-Instituto di Radioprotezione, 16 Via dei colli, 40136 Bologna (BO) Italy (email gauald@bologna.enea.it. Phone 39 051-6098350, fax 39 051-6098003). Preliminary registration will begin February 15, 2007. Details and the latest news regarding the workshop can be found at http://www.eurados.org/.

NUPPAC' 07

The 6th Conference on Nuclear and Particle Physics (NUPPAC '07) will be held 17–21 Nov. 2007, in Luxor, Egypt. The conference topics are:

- Nuclear Scattering and Reactions
- Nuclear Models and Spectroscopy
- High Energy and Particle Physics
- Neutron and Reactor Physics
- Plasma and Fusion Physics
- Relativistic and Quantum Physics
- Computer Codes (modeling, simulation, analysis)
- Nuclear Analytical Techniques
- Reactor and Accelerator Utilization
- Detectors and Instrumentation
- Radiation Measurements and Dosimetry
- Applied Nuclear Physics

The registration and instructions for submitting abstracts to the conference can be found at the website, http://www.geocities.com/Athens/Library/7348/NUPPAC_07.html. Correspondence should be addressed to Prof. Dr. M.N.H. Comsan, Chairman of NUPPAC' 07, Egyptian Nuclear Physics Association (ENPA), 3 Ahmed Elzomor St., Elzohour District, Nasr City, Cairo, Postal Code 11787, Egypt (phone 202-4021018, fax 202-2876031, email mnhcomsan@menanet.net or comsanmn@hotmail.com).

CALENDAR

January 2007

MCNPX Advanced Workshop, Jan. 8–12, 2007, Las Vegas, Nevada. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com) url http://mcnpxworkshops.com.

3D S.UN.COP 2007, Jan. 22–9 Feb. 2007, Texas A&M University, College Station, Texas. Contact: Alessandro Petruzzi (email a.petruzzi@ing.unipi.it) url http://dimnp.ing.unipi.it/3dsuncop.

Safety Cases for the Deep Disposal of Radioactive Waste—Where Do We Stand? International symposium organized by the OECD NEA, Jan. 23–25, 2007, Paris. Contact: Betsy Forinash, NEA Radioactive, 12 Blvd. des Îles, 92130 Issy-les-Moulineaux, France (email igsc@oecd.org).

MCNPX Introductory Workshop, Jan 29–Feb 2, 2007, Paris, France. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com) url http://mcnpxworkshops.com.

February 2007

Conference on Nuclear Training and Education (CONTE III), Feb. 4–7, 2007, Jacksonville, FL. Registration and Meeting Information: http://www.ans.org/goto/nad.cgi?id=1157691600-16.

Waste Management 2007 (WM 2007), Feb. 25–March 1, 2007, Tucson, Arizona. Contact: Gary Benda (phone 803-345-2170 or email gbenda@wmarizona.org) url www.wmsym.org.

March 2007

WIN Region II Conference 2007, March 5–6, 2007, Atlanta, GA. Contact: Equilla Minga at mingabe@inpo.org, url http://www.winus.org/.

SCALE Training: TSUNAMI Sensitivity/Uncertainty Tools Course, March 5–8, 2007, Oak Ridge National Laboratory, Oak Ridge, TN. Information and registration can be found at http://www.ornl.gov/sci/scale/training.htm.

SCALE Training: ORIGEN-ARP/TRITON Course, March 12–16, 2007, Oak Ridge National Laboratory, Oak Ridge, TN. Information and registration can be found at http://www.ornl.gov/sci/scale/training.htm.

MCNPX Intermediate Workshop, Mar 12–16, 2007, San Francisco, California. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com) url http://mcnpxworkshops.com.

First International Conference on Physics and Technology of Reactors and Applications (PHYTRA1), March 14–16, 2007, Marrakech City, Morocco. Contact: Pr. A. Jehouani, Faculty of Sciences Semlalia, Dept. of Physics, University Cadi Ayyad- Marrakech, Morocco (email phytra@ucam.ac.ma or jehouani@yahoo.com, fax 212 44 43 74 10) or Pr. L. Erradi, GMTR President, Mohammed V. Agdal University, Faculty of Sciences, Department of Physics, B. P. 1014 Rabat, Morocco (email erradi@fsr.ac.ma or erradi@hotmail.com, fax 212-0-37-77-89-73) url http://www.fst.ac.ma/gmtr/phytra1/phytra1.html.

SCALE Training: KENO-VI Course, March 19–23, 2007, Oak Ridge National Laboratory, Oak Ridge, TN. Information and registration can be found at http://www.ornl.gov/sci/scale/training.htm.

International Workshop on Monte Carlo Codes, March 26–27, 2007, NPL, Teddington, UK. Contact: David Shipley (phone +44 (0) 20 8943 6252, fax +44 (0) 20 8943 6070, email david.shipley@npl.co.uk), Mark Bailey (phone +44 (0) 20 8943 6797, fax +44 (0) 20 8943 6070, email mark.bailey@npl.co.uk) or Alan DuSautoy (phone +44 (0) 20 8943 6563, fax +44 (0) 20 8943 6070, email alan.dusautoy@npl.co.uk) url http://www.npl.co.uk/ionrad/training/montecarlo/.

13th UK Monte Carlo User Group Meeting (MCNEG 2007), March 28–29, 2007, NPL, Teddington, UK. Contact: David Shipley (phone +44 (0) 20 8943 6252, fax +44 (0) 20 8943 6070, email david.shipley@npl.co.uk), Mark Bailey (phone +44 (0) 20 8943 6797, fax +44 (0) 20 8943 6070, email mark.bailey@npl.co.uk) or Alan DuSautoy (phone +44 (0) 20 8943 6563, fax +44 (0) 20 8943 6070, email alan.dusautoy@npl.co.uk) url http://www.npl.co.uk/ionrad/training/montecarlo/.

April 2007

Joint International Topical Meeting on Mathematics & Computations and Supercomputing in Nuclear Applications (M&C+SNA), April 15–19, 2007, in Monterey, California. Contact: general questions (mcinfo@nuc.berkeley.edu); submit questions regarding the program (vujic@nuc.berkeley.edu) url http://mc-sna07.nuc.berkeley.edu/.

International Conference on Nuclear Data for Science and Technology, April 22–27, 2007, Nice, France. Contact: nd2007@cea.fr, url: http://www-dapnia.cea.fr/Sphn/nd2007/site_nd2007/.

Women in Nuclear (WIN) Global Conference 2007, April 22-27, 2007, Bali, Indonesia. Information: http://win-global.org/.

MCNPX Introductory Workshop, April 30–4 May, 2007, Honolulu, Hawaii. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com) url http://mcnpxworkshops.com.

June 2007

ICENES 2007, June 3–8, 2007, Istanbul. Contact: Prof Dr. Sümer Şahin, Gazi University 06500 Ankara, Turkey Contact: Prof Dr. Sümer Şahin, Gazi University 06500 Ankara, Turkey (phone +90 312 212 43 04, fax +90 312 212 43 04, email sumersahin@icenes2007.org) url http://www.icenes2007.org/.

MCNPX Introductory Workshop, June 4–8, 2007, Santa Fe, New Mexico. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com) url http://mcnpxworkshops.com.

ANS Annual Meeting, "It's All About the People: The Future of Nuclear," June 24–28, 2007, Boston, Massachusetts. The url is http://www.ans.org/meetings/.

Space Nuclear Conference 2007 (SNC '07), an embedded topical of the ANS Annual Meeting, June 24–27, 2007, Boston. Contact: Lynne Schreiber, Conference Administrator, (phone 352-392-9722, fax 352-392-8656, email space@ans.org) url www.ans.org/goto/space07.

July 2007

U.S. Women in Nuclear Conference 2007, July 15-17, 2007, Anaheim, Calif. URL http://www.winus.org/.

ANS/IAEA International Conference on Applications and Utilization of Accelerators (AccApp'07), July 30-Aug. 2, 2007, Pocatello, Idaho. Contact: Conference Administrator, Ms. Nikki Iwert-Bays (Nikki.Iwert-Bays@inl.gov@inl.gov) url: http://www.iac.isu.edu/accapp07/.

September 2007

Global '07 "Advanced Nuclear Fuel Cycles and Systems" Sept. 9–13, 2007, Boise, Idaho. Information is posted at http://nuclear.inel.gov/global07/contacts.shtml.

MCNPX Advanced Workshop, Sept 17–21, 2007, Santa Fe, New Mexico. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com) url http://mcnpxworkshops.com.

International Radiation Protection Association (IRPA) Regional Congress for Central and Eastern Europe, Sept. 24–28, 2007, Brasov, Romania. Contact: Constantin Milu, Institute of Public Health, Str. dr. Leonte No.1-3, RO-050463 Bucharest 35, Romania (phone (40 21) 3141971, fax (40 21) 3183635, email irpa2007@ispb.ro) url: http://www.irpa2007romania.com/.

October 2007

CONRAD WP4 workshop on "Uncertainty Assessment in Computational Dosimetry: A Comparison of Approaches," Oct. 1–3, 2007, Bologna, Italy. Contact: Dr. Gianfranco Gualdrini, ENEA-Instituto di Radioprotezione, 16 Via dei colli, 40136 Bologna (BO) Italy (email gauald@bologna.enea.it, phone 39 051-6098350, fax 39 051-6098003) url: http://www.eurados.org/.

MCNPX Intermediate Workshop, October 22–26, 2007, Europe. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com) url http://mcnpxworkshops.com.

November 2007

NUPPAC '07, 17–21 Nov. 2007, Luxor, Egypt. Contact: Prof. Dr. M.N.H. Comsan, Chairman of NUPPAC' 07, Egyptian Nuclear Physics Association (ENPA), 3 Ahmed Elzomor St., Elzohour District, Nasr City, Cairo, Postal Code 11787, Egypt (phone 202-4021018, fax 202-2876031, email mnhcomsan@menanet.net or comsanmn@hotmail.com) url: http://www.geocities.com/Athens/Library/7348/NUPPAC_07.html.