Radiation Safety Information Computational Center

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The essential element in personal magnetism is a consuming sincerity—an overwhelming faith in the importance of the work one has to do.—Bruce Barton

Obituaries

Thomas W. Burrows (1943–2008), a long-time scientist at the National Nuclear Data Center, Brookhaven National Laboratory, passed away on July 1, 2008. Tom received his B.S. (1965) and Ph.D. (1972) from the University of Wisconsin, Madison, WI, where. he was part of the prestigious physics group headed by Dr. H. Heinz Barschall who was also his thesis adviser. He was a nuclear information research associate at the University of Kentucky for two years (1972–1974). In September 1974 he joined the National Nuclear Data Center (NNDC) at Brookhaven National Laboratory (BNL) and remained for the rest of his career.

Tom contributed to, and excelled in, practically all projects that the NNDC undertook. Tom started at NNDC as a neutron cross section evaluator for ENDF/B-V and took the lead in the charged-particle reaction bibliography. When the NNDC took on the responsibility for the Evaluated Nuclear Structure Data File (ENSDF), Tom was on its forefront. He published 27 mass-chain evaluations and contributed heavily to the creation of the NNDC databases and their online access. Tom kept abreast with the latest technology and created the first web pages for the NNDC. Given charge of the complex analysis codes for structure evaluations, evaluators throughout the world were grateful to him for his meticulous care in maintenance of those codes. For the NNDC he maintained the extremely complex software used in production of the Nuclear Data Sheets journal. Tom also mentored a new generation of ENSDF evaluators who appreciated his patience and thorough approach.

Conscientious, dedicated, and hard working with a keen sense of detail and an almost encyclopedic knowledge in many fields of interest to him, Tom will be dearly missed by his family, his colleagues at the NNDC and all the evaluators of the international Nuclear Structure and Decay Data Network. A webpage In Memory of Tom Burrows is accessible from www.nndc.bnl.gov.

Changes to the Computer Code and Data Collection

CCC-745/ERANOS 2.0

DER/SPRC/LEPh, CEA-Cadarache, France, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Moulineaux, France, contributed this modular code and data system for fast reactor neutronics analyses. The European Reactor ANalysis Optimized calculation System, ERANOS, has been developed and validated with the aim of providing a suitable basis for reliable neutronic calculations of current as well as advanced fast reactor cores. It consists of data libraries, deterministic codes and calculation procedures which have been developed within the European Collaboration on Fast Reactors over the past 20 years or so, in order to answer the needs of both industrial and R&D organizations. The whole system counts about 250 functions and 3000 subroutines totaling 450000 lines of Fortran-77 and ESOPE instructions.

The main contents of the ERANOS-2.0 package are: nuclear data libraries (multigroup cross-sections from the JEF-2.2 evaluated nuclear data file, and other specific data files), a cell and lattice code (ECCO), reactor flux solvers (diffusion, Sn transport, nodal variational transport), a burn-up module, various processing modules (material and neutron balance, breeding gains, etc.), tools related to perturbation theory and sensitivity analysis, core follow-up modules (connected in the PROJERIX procedures), a fine burn-up analysis subset named MECCYCO (mass balances, activities, decay heat, dose rates). Coupled neutron/gamma calculations are also possible using specific libraries.

The ECCO code in the package contains four neutron cross section libraries derived from the JEF-2.2 nuclear data evaluated files that are listed below. Other nuclear data (fission yields and energies, decay constants, gamma production and interaction libraries, etc.) are provided in separate files.

- 1968-group library (41 main nuclides),
- 33-group library (246 nuclides, including pseudo fission products),
- 175-group library (VITAMIN-J energy group scheme), and
- 172-group library (XMAS energy group scheme, 246 nuclides, including pseudo-FP).

The programming language is ESOPE, an extension of Fortran 77 specific to CEA, and treated by a built-in pre-compiler. The main objective of this extension is to make the management of the data used by the various subroutines easier. This program is distributed by the NEA Data Bank and by RSICC as received from the authors. The code was developed on a REDHAT 7.0 linux system.

ERANOS is distributed on 3 CDs which include source code, binary data libraries, Makefiles, scripts, test cases and documentation (manuals and technical documents in HTML and PDF formats). Reference: Rapport Technique RT/SPRC/LEPh 97-001 (and others). C and Fortran-77; Linux-based PC (C00745MNYWS00).

PSR-546/DWUCK-CHUCK

The University of Colorado, Boulder, Colorado, contributed this nuclear model code system for distorted wave born approximation and coupled channel calculations. This package contains DWUCK-4, DWUCK-5 and CHUCK-3. The DWUCK program calculates the scattering differential cross section. The incoming and outgoing waves may be in any combination of spin 0, 1/2 or 1 particles. For DWUCK-4 the general form of the distorted wave Born approximation (DWBA) is used. DWUCK-5 is the finite range version of DWUCK-4. The program CHUCK3 can be used for coupled-channel calculations to evaluate nuclear scattering amplitudes and differential collision cross sections. It calculates nuclear reaction cross sections by numerically solving an appropriate set of coupled equations.

The codes were first developed in the 1970s. RSICC originally packaged the VAX version in 1986 as PSR-235. This PSR-546 package includes files which the author updated to run on PC under Windows. The included PC executables were created by the author with MS Fortran version 5.0. The package is

transmitted on a CD in a Winzip file which includes the referenced documents, the source code, 16-bit and 32-bit Windows PC executables, and test cases. References: Unpublished descriptions of the codes. Fortran 77; VAX and PC (P00546MNYCP00).

DLC-196/PR-EDB Version 3

Oak Ridge National Laboratory, Oak Ridge, Tennessee, and the U.S. Nuclear Regulatory Commission, Washington, DC, contributed a newly frozen version of the Power Reactor Embrittlement Database. PR-EDB Version 3.0 upgrades the previous Version 2.0 which was released in January 1994. The first compilation of embrittlement data for power reactors was completed in 1989 and was subsequently submitted to the Electric Power Research Institute (EPRI) for additional verification and quality assurance by the reactor vendors. The purpose of this NRC-sponsored program is to provide the technical bases for voluntary consensus standards, regulatory guides, standard review plans, and computer codes.

The current version of the PR-EDB lists test results of 104 heat-affected-zone (HAZ) materials, 115 weld materials, and 141 base materials, including 103 plates, 35 forgings, and 3 correlation monitor materials that were irradiated in 321 capsules from 106 commercial power reactors. The data files are given in MS Access format and can be accessed with any personal computer using the Windows operating system. Included "user-friendly" utility programs allow the user to retrieve, select and manipulate specific data, display data to the screen or printer, and fit and plot Charpy impact data. The package is compatible with Windows 98 up through XP but is not compatible with Windows Vista and Office 2007. Either Microsoft Office 2000 or 2003 must be installed on the user's computer. MS Office is not included in this distribution. The package was developed based on the Microsoft .NET framework technology using Microsoft Access for backend data storage and Microsoft Excel for plotting graphs. PR-EDB Version 3.0 also contains an "Evaluated Residual File" utility for generating evaluated processed files used for radiation embrittlement study.

The package is transmitted on one CD in a WinZIP file and includes the referenced document, database files and Windows program executables. Reference: ORNL/TM-2006/605 (February 2008). MicroSoft Access format, PC running Windows 98 through XP (D00196IBMPC03).

ANS News

ANS ADOPTS NEW POSITION STATEMENTS

The ANS Board of Directors adopted two new position statements during its annual meeting. ANS Position Statements reflect the Society's perspectives on issues of public interest that involve various aspects of nuclear science and technology. The new statements are "Nuclear Power: A Leading Strategy to Reduce Oil Imports" (PS 82) and "The Societal Benefits of Radiation" (PS 73). The Board also revised "Clearance of Solid Materials from Nuclear Facilities" (PS 50) and "Fusion Energy" (PS 12). All position statements are located on the Society's website at http://www.ans.org/goto/nad.cgi?id=1215666000-4.

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.

Introductory and Advanced MCNP Visual Editor Training

Date	Class	Location
Sept. 8–12, 2008	Introduction to MCNP using the MCNP/MCNPX Visual Editor	Richland, WA
Nov. 3–7, 2008	Introduction to MCNP using the MCNP/MCNPX Visual Editor	Reno, NV

Classes are taught using the most recent (beta) version of the Visual Editor Code. Beta versions will only be available to students that own the RSICC version 5 release. Bring proof of ownership to the class.

The introductory classes combine teaching on MCNP physics, along with instructions on how to use the Visual Editor. The advanced class assumes the user has experience using MCNP or MCNPX and focuses on Visual Editor topics. Computer demonstrations and exercises will focus on creating and interrogating input files with the Visual Editor. Advanced visualization work using MCNP will also be demonstrated. Both the introductory and advanced classes will be taught on Pentium computers running Windows 2000. Attendees are encouraged to bring their own input files for viewing and modifying in the visual editor. The course description and registration information can be found at http://www.mcnpvised.com/index.html.

MCNP Class Schedule

August 18–21, 2008	Advanced - Variance Reduction	Los Alamos National Laboratory
August 25–28, 2008	Advanced - Criticality	Los Alamos National Laboratory
Sept. 29–Oct. 3, 2008	Introduction to MCNP5 and MCNPX	Los Alamos National Laboratory
October 27–31, 2008	MCNP/MCNPX Intermediate Workshop	Munich, Germany
November 3–7, 2008	MCNP/MCNPX Intermediate Workshop: Focus on Homeland Security	Washington, DC

Introductory classes are for people who have little or no experience with MCNP. This class surveys the features of MCNP so the beginning user will be introduced to the capabilities of the program and will have hands-on experience at running the code to solve simple problems. Course topics include Basic Geometry, Source Definitions, Output (Tallies), Advanced Geometry (repeated structures specification), Variance Reduction Techniques, Statistical Analysis, Criticality, Plotting of Geometry and Tallies, and Neutron/Photon/Electron Physics.

Advanced classes are for people with MCNP experience who want to extend their knowledge and gain depth of understanding. Most areas of MCNP operation will be discussed in detail, with emphasis on Advanced Geometry, Advanced Variance Reduction Techniques, and other advanced features of the program. Time will be available to discuss approaches to specific problems of interest to students. Classes on specific topics are offered when there is sufficient interest. In the recent past, classes on variance reduction and on criticality have been taught.

Registration and the most current information can be found at http://mcnp-green.lanl.gov/classinformation.html.

Short Courses on Monte Carlo Analysis and Nuclear Criticality Safety

The Department of Nuclear Engineering at the University of Tennessee-Knoxville is offering short courses for radiation transport and criticality safety specialists during Tennessee Industries Week (TIW-43), August 11–15, 2008.

Nuclear Criticality Safety—Engineers, scientists, and technical managers who wish to increase their knowledge and understanding of nuclear criticality safety will be interested in the criticality safety course. The topics covered in the course are based primarily on the experience of the five instructors which totals over 120 years of nuclear criticality safety related experience. Such a wealth of experience needs to be shared with the criticality safety community including both new professionals in the field as well as experienced professionals.

Monte Carlo Analysis—Monte Carlo is often the method of choice to solve complex problems in nuclear criticality safety and radiation shielding. To use Monte Carlo effectively, the analyst must understand the theoretical and computational fundamentals of the method, as well as the computational options available in particular computer tools. Also, it is sometimes advantageous to create new special-purpose Monte Carlo programs to solve particular problems rather than use an existing program. The Monte Carlo course runs for 5 days.

The deadline for registration is **July 28, 2008**. Classes are limited in size and will be filled on a first-come, first-serve basis. For additional information on these and other courses offered during TIW-43, contact Kristin England at the University of Tennessee, phone (865) 974-5048, email kengland@utk.edu, url http://www.engr.utk.edu/nuclear/TIW.html.

SCALE Training Courses at ORNL

Date	Title	Description
October 13–17, 2008	**KENO V.a**	Criticality safety with the most widely used version of KENO
October 20–24, 2008	**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
October 27–31, 2008	**KENO-VI/MAVRIC**	KENO-VI: Criticality safety using the generalized geometry version of KENO MAVRIC: 3-D automated variance reduction for deep-penetration and complex shielding problems
November 3–7, 2008	**TSUNAMI Sensitivity/ Uncertainty Tools Course** (Experienced KENO users only)	1-D and 3-D sensitivity/uncertainty analysis using XSDRNPM

The registration fee is $1800 for each course. A late fee of $300 will be applied after September 13. 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 a minimum of 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.

OECD/NEA Data Bank Hosts SCALE TSUNAMI Training Course

OECD/NEA Data Bank is hosting a training course October, 13–17, 2008 on sensitivity and uncertainty analysis using the SCALE TSUNAMI sequence at the KFKI Atomic Energy Research Institute, located at 1121 Budapest, Konkoly Thege út 29-33. The course is open to participants in uncertainty analysis in modeling (UAM) and others from the OECD/NEA member countries who wish to get training in this important area of application. This is also held in support of the first phase of the activity of the UAM concerned with neutronics in reactor cores, http://www.nea.fr/html/science/egrsltb/UAM/, and the numerous other activities in areas of multi-scale/multi-physics activities, radiation shielding and criticality margin assessments.

In addition to providing hands-on training with the TSUNAMI code sequence, the course will provide perspectives for developments that will soon be available. The teachers of the course are well known experts involved with the development of these methods at the Oak Ridge National Laboratory. The course is organized by the OECD NEA Data Bank, together with the SCALE development team and with the support of the Radiation Safety Information Computational Center.

The deadline for registration is **August 31, 2008**. The number of participants is limited to about 20. For more information access the syllabus and then fill in the Registration Form. You may also contact Cristina Lebunetelle, OECD/Nuclear Energy Agency Data Bank (email: programs@nea.fr, fax +33 1 45241109).

Registered participants will receive further information on request or after the registration deadline.

PHYSOR'08

The International Conference on the Physics of Reactors (PHYSOR'08) will be held at the Kursaal Conference Center, Interlaken, Switzerland, September, 14–19, 2008. The conference theme is "Nuclear Power: A Sustainable Resource," and is jointly organized by the Paul Scherer Institut and the Swiss Nuclear Society. This international conference follows the tradition of the earlier PHYSOR meetings and seeks to provide a forum for worldwide experts in reactor physics, nuclear power plant analysis and related technologies. Relevant information may be found at http://www.physor2008.ch/.

18th Topical Meeting on the Technology of Fusion Energy

The 18th Topical Meeting on the Technology of Fusion Energy (18th TOFE) will be held in San Francisco, California, September 28–October 2, 2008. The TOFE meeting provides a forum for sharing the exciting progress made in fusion research as well as presenting the future plans for national and worldwide fusion programs. The conference is sponsored by the American Nuclear Society (ANS), Northern California Section of the ANS, Lawrence Livermore National Laboratory, and the Atomic Energy Society of Japan. For additional information, please contact the General Chair: Jeff Latkowski, 18th TOFE Meeting, 4435 First Street #155, Livermore, CA 94551 (phone 925-423-9378, fax 925-424-6401, email: latkowski@llnl.gov). Check the website, http://www.18th-tofe.com/, frequently for updated information, registration information, etc.

6th Joint INMM/ESARDA Workshop

Meeting Safeguards Challenges in an Expanding Nuclear World is the theme for the 6th Joint INMM/ESARDA Workshop, October 6–9, 2008, at the International House of Japan in Roppongi, Tokyo. The Workshop is organized by the Institute of Nuclear Materials Management (INMM) International Safeguards Division and Japan and Korea INMM Chapters, and the European Safeguards R&D Association (ESARDA).

The Workshop will address in depth the current issues in international safeguards and the nonproliferation regime, under the following main themes.

- safeguards implementation and state evaluation,
- technical progress: the safeguards toolbox,
- safeguards and nonproliferation policy and institutional issues, and
- academic and applied safeguards and nonproliferation programs in asia, europe and the united states.

The Workshop will have opening and closing plenary sessions and two days of parallel working group sessions. Four working groups will address the Workshop themes. Experts will introduce the particular topics in each Working Group with time allotted for full discussion. The Working Group Chairs will present the Working Group results at the Closing Plenary session.

For more information, contact: Jim Larrimore, Workshop Co-Chair, Chair, INMM International Safeguards Division (phone (+1) 858-509-9604, fax (+1) 858-509-2890, email JamesLarrimore@san.rr.com) or Gotthard Stein, Workshop Co-Chair, Vice-Chair, INMM International Safeguards Division (phone (+49) 228-676988, fax (+49) 2461-61-2496, email g.stein@fz-juelich.de). The url for the Workshop is http://www.inmm.org/events/esarda08.cfm.

ARIA 2008

The Paul Scherrer Institut, Villigen PSI in collaboration with Oak Ridge National Laboratory (ORNL) has scheduled the First International Workshop on Accelerator Radiation Induced Activation for October 13–17, 2008, in Villigen, Switzerland.

This workshop seeks to bring together scientists and engineers interested in problems of radionuclide transmutation in various applications at accelerator facilities. While the primary focus will be on computational methods to calculate radionuclide buildup and depletion and on experimental benchmarks for comparison, the workshop will also include discussion of transmutation systems, nuclear data and practical applications. The workshop should appeal to those interested in neutron- and accelerator-induced activation; radioactive waste generation, transmutation and burnup; medical isotope production; and radionuclide production in accelerator-driven physics facilities.

Topics include:

- calculation methods (e.g. monte carlo methods, buildup and decay codes),
- nuclear data (e. g. activation cross sections, nuclear reaction codes, decay data bases, cross section measurements), and
- experimental validation and applications (e.g. benchmark experiments, practical application in radiation protection, etc.)

To express your interest in attending the workshop send an e-mail to ARIA'08. See http://aria.web.psi.ch or contact Daniela Lerch, Secretary (phone +41 56 310 33 82, email daniela.lerch@psi.ch) for further information.

IRPA 12

The 12th International Congress of the International Radiation Protection Association (IRPA 12), will take place in Buenos Aires, Argentina, October 19–24, 2008. To support the Congress motto, “strengthening radiation protection worldwide,” the scientific areas and topics are divided into three parts.

Part 1: Epistemological Basis of Radiation Protection

1. Characterisation of Radiation Exposure
2. Biological Effects of Radiation Exposure

Part 2: Radiation Protection Paradigm
1. Developing the Radiation Protection Framework
2. Developing Protection Policies, Criteria, Methods and Culture
3. Emergency Planning, Preparedness and Response

Part 3: Radiation Protection and Safety in Practice
1. Nuclear Installations
2. NIRs
3. Medicine
4. NORM in Industry
5. Other Applications and Practices

All information regarding registration, technical program, etc., may be found at the website, www.irpa12.org.ar. Questions regarding all aspects of the Congress may be addressed to secretariat@irpa12.org.ar.

5th Workshop on Neutron Measurements, Evaluations and Applications Nuclear Data for Sustainable Nuclear Energy

The 5th Workshop on Neutron Measurements, Evaluations and Applications Nuclear Data for Sustainable Nuclear Energy will be held October 27–29, 2008, in Ljubljana, Slovenia. The aim of the workshop is to provide a comprehensive overview of nuclear data production methods and their relation to the data needs for applications with potential economic impact. Contributions should highlight state-of-the-art and new developments of relevance for meeting the requirements on nuclear data associated with advanced reactor systems. Data users are invited to present comprehensive views on data needs.

In order to enhance the potential for high-quality networking, experts worldwide are invited to attend and the participation of post doctoral fellows and PhD students who wish to present their work is encouraged.

Workshop topics include:

- advanced reactor concepts–-Generation IV, GNEP,
- accelerator driven systems,
- advanced fuel cycles,
- measurements,
- evaluations, and
- benchmarking, testing and adjustments.

September 15, 2008, is the deadline for submitting abstracts. Details regarding the submission of abstracts and other information related to the workshop may be found at http://candide.nri.cz/nemea.php. Contact Carmen Cabanillas Platero, European Commission, Joint Research Centre, Institute for Reference Materials and Measurements, Retieseweg 111, B-2440 Geel, Belgium (phone +32 (0)14 571 411, fax+32 (0)14 571 862, email jrc-irmm-nemea-5@ec.europa.eu).

International Workshop on Gamma Spectrometry Analysis Codes for U and Pu Isotopics

The Oak Ridge National Laboratory will host a joint INMM/ESARDA workshop, “International Workshop on Gamma Spectrometry Analysis Codes for U and Pu Isotopics,” November 3–7, 2008. The objective of the workshop is to provide an international forum for code developers, commercial

distributors and end users to interface and develop solutions to many of the programmatic and technical issues associated with each of the codes capabilities, limitations, applicability, sustainability, and version control. Featured codes include FRAM, MGA, MGAU, NaIGEM, WinU235, WinUF6 and U235HI. Other codes may also be included. The workshop will also provide an international forum for discussing development of an internationally accepted standard test method for such codes. For more information contact Alena Zhernosek (phone 865-241-2552, email zhernosekav@ornl.gov) url http://www.inmm.org/events/gamma/index.cfm.

LOWRAD 2008

The 7th International Meeting on the Effects of Low Doses of Radiation in Biological Systems: New Perspectives on Human Exposure (LOWRAD 2008) will be held in Lisbon, Portugal, November 27–29, 2008. The meeting is being organized by members of the Radiobiology Group of the Department of Radiological Protection and Nuclear Safety of the Portuguese Nuclear and Technological Institute. Topics include:

- epidemiology of occupational and environmental low dose exposure,
- novel biomarkers for population screening in low dose exposures,
- non-targeted effects,
- computer simulation and modelling for low dose radiation risk,
- genetic susceptibility,
- radioecology,
- low dose and protracted exposure effects,
- validity of the linear non-threshold model,
- hormesis and adaptive response,
- microenvironment modulation of radiation response,
- radioactive waste management,
- micro-array and proteomic analysis,
- dna repair and misrepair,
- radioprotectors and radiosensitizers,
- molecular and biophysical approaches to radiation-induced carcinogenesis,
- non-genetic effects of radiation,
- genomic and chromosomal instability,
- long term effects of the medical applications of radiation, and
- microdosimetry and nanodosimetry.

Contact Margarida Goulart de Medeiros (phone +351 21 994 6347, fax +351 21 994 1995), Octávia Monteiro Gil (phone +351 21 994 6344, fax +351 21 994 1995), or Secretariat, Luisa Oliveira (email lowrad2008@itn.pt), Nuclear and Technological Institute Department of Radiological Protection and Nuclear Safety Estrada Nacional 10, 2686 - 953 Sacavém, Portugal. Watch the website, http://www.lowrad2008.itn.pt/index.html, for abstract submission and up-to-date information.

CONTE 2009

The Conference on Nuclear Training and Education, CONTE 2009, an American Nuclear Society Topical Meeting, will be held February 8–11, 2009, in Jacksonville, Florida. Titled “Education, Training & Workforce Development—The Global Path to the Nuclear Energy Future,” participants will learn about:

- current nuclear energy issues and challenges,
- new education & training techniques,
- workforce development strategies,
- emerging nuclear power options,
- benchmarking,
- knowledge retention, and
- successful methods to address these challenges.

Information about the conference will be posted on the webpage at http://www.ans.org/meetings/calendar.cgi?d=2-8-2009. The program co-chairs are Kent W Hamlin (INPO, email HamlinKW@INPO.org) and Brian K. Hajek (Ohio State University, email hajek.1@osu.edu).

Advances in Nuclear Fuel Management IV

Advances in Nuclear Fuel Management IV will be held April 12–15, 2009, in Hilton Head, South Carolina. The meeting is a forum for addressing a broad spectrum of front-end nuclear fuel management activities, within the context of reactor physics and fuel cycle economics. Topics will range from methods development and verification to design and implementation of new in-core fuel products and strategies.

A list of technical sessions follows.

- Addressing Practical Design Constraints On Fuel Management
- Advanced Fuel Assembly and Burnable Absorber Designs
- Advanced Fuel Management and Multi-dimensional Burnup Analysis
- Advances In Reactor Stability
- Automated and Interactive Fuel Management Design and Optimization Tools
- Error Quantification of Core Simulation Capabilities
- Experiences and Advances In On-Line Core Monitoring
- Extended Fuel Cycles and Economic Analysis
- Fuel and Core Design Based On Thorium Cycles
- Fuel Cycle Core Design for Advanced Reactor Concepts
- Fuel Temperature Feedback for Steady-State and Transients
- Generation of Cross Section Libraries and Whole Core Transport Calculations
- Generation-IV Design Concepts
- High Enrichment >5wt% UO2 Studies
- Innovative Core Loading Strategies and Methods
- Management, Design, and Operation Issues of Advanced Reactor Fuels
- Model Comparisons Against Measured Reactor Power Data
- Monte Carlo-based Depletion and Full Core Analysis: New Developments and Issues
- MOX Utilization In Reactors
- Nodal and Lattice Physics Methods
- Nuclear Data Needs to Enhance Core Simulation Fidelity
- Reactor-Based Plutonium Disposition
- Research Reactor Topics—Fuel Management Practices
- Simulation and Study of Advanced Nuclear Fuel Cycles
- Utilities Experience In Reload Design and Licensing
- Utilization of Zero Power Physics Tests and Core Follow Data to Enhance Core Simulation Fidelity
- Validation of Core Analysis Tools for Fuel Management

The deadline for electronic submission of papers is **October 31, 2008**. General Chair for the conference is John Siphers, Progress Energy (phone 919-546-4032, email john.siphers@pgnmail.com) and the Technical Program Co-chairs are Ivan Maldonado, University of Tennessee (phone 865-974-7562, email imaldona@utk.edu) and Atul Karve, Global Nuclear Fuel, (phone 910-675-5802, email atul.karve@gnf.com). Additional details are posted at the conference Web Site: http://anfm2009.org.

2009 International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics

The 2009 International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics will be held May 3–7, 2009, in Saratoga Springs, New York. The Conference will

provide an international forum to present and discuss recent research in mathematical modeling and computing as applied to nuclear engineering and particle transport. This conference is part of a series of topical meetings organized by the Mathematics and Computation Division of the American Nuclear Society and returns to Saratoga Springs, New York—the site of the 1997 conference in this series. The technical program will consist of plenary sessions, parallel oral presentation sessions, and poster sessions. There will also be one or more workshops.

The call for papers has been issued soliciting work in all areas of computational and mathematical methods for analysis of nuclear systems as well as from related disciplines including reactor physics, materials science, shielding, fluid dynamics, medical and biological applications, environmental sciences, fundamental mathematics, and benchmarking. Subject categories include:

- deterministic transport theory methods,
- monte carlo transport theory methods,
- hybrid methods in particle transport,
- perturbation and variational methods,
- computational fluid dynamics,
- computational environmental science,
- nuclear data methods and analysis,
- criticality and safety analysis,
- computational materials science,
- high-performance / large-scale computing,
- high-impact software design,
- characteristic and diffusion theory methods,
- nuclear reactor analysis,
- reactor kinetics methods,
- accelerators and subcritical systems,
- computational plasma physics,
- radiation protection and shielding,
- methods for advanced reactor concepts,
- optimization methods,
- computer codes and benchmarks (poster session),
- multi-physics simulation methods,
- computational medical physics, and
- verification and validation methods.

A 1500-word summary must be submitted to the conference electronically no later than **September 30, 2008** in order to ensure that it is included in the review process. Check the conference website http://local.ans.org/ne-ny/topical_2009_neny.html for instructions for submitting your work for consideration and for general conference information. General chair of the conference is Ray Gamino (ray.g.gamino@lmco.com).

Radionuclide Therapy and Radiopharmaceutical Dosimetry

The 3rd International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry and Workshop on Alpha-Emitting Radionuclides in Therapy will convene June 13–17, 2009, in Toronto, Canada, in conjunction with the 2009 Society of Nuclear Medicine (SNM) Annual Meeting, which is being planned. This symposium follows the successful first (Helsinki 2004) and second (Athens 2006) symposiums. This 2009 RTRD Symposium will blend with SNM sessions in oncology, radiopharmaceutical chemistry, radiobiology and dosimetry. The workshop will highlight current progress in the use of alpha-emitters for cancer therapy, continuing a series of successful alpha-emitter workshops. Symposium topics will include:

- data collection and quantitative imaging,
- biodistribution and pharmacokinetics,
- clinical dosimetry and treatment planning,
- alpha emitters in cancer therapy,
- auger electron emitters,
- radiobiological studies, and
- therapy of skeletal metastases and bone pain palliation.

All announcements and mailings for the symposium will be electronic and by website postings. Those who wish to participate in the symposium must register with SNM to attend the Annual Meeting. Separate symposium registration will not be offered. Registration, housing, local arrangements, transportation, and other logistical arrangements will be handled by SNM. Local arrangement details will be available at a later date on the SNM website at: www.snm.org. A future announcement will provide instructions for submitting abstracts. George Sgouros (gsgouros@jhmi.edu) is Vice-chair of the organizing Committee and Michael Lassmann (Lassmann_M@klinik.uni-wuerzburg.de) is Chair of the Committee.

ICENES-2009

The 14th International Conference on Emerging Nuclear Energy Systems (ICENES-2009) will be held June 29–July 3, 2009 in Ericeira, Portugal. The main objective of the ICENES series is to provide an international forum for scientists, engineers, industry leaders, policy makers, decision makers and young professionals to present and discuss various advanced, innovative and non-conventional nuclear energy production systems. A new dimension of ICENES2009 will extend the forum to include innovative non-nuclear technologies, such as hydrogen energy, solar energy, deep space exploration, etc. A special new field in ICENES 2009 will be the discussion and proposals of new tools for a more efficient way to organize R&D in nuclear energy and related fields, and to boost international cooperation. ICENES2009 takes place in a special moment, at the dawn of a new era for nuclear energy, marked by the nuclear energy "renaissance" and following a major step forward towards the development and implementation of nuclear fusion energy, with the recent decision to build ITER.

Conference topics include:

- advanced fission systems and fuel cycles,
- fusion energy systems,
- radiation protection & shielding,
- nuclear physics unusual applications,
- new nuclear medicine applications,
- nuclear and solar space power and propulsion,
- nuclear hydrogen production & the hydrogen economy,
- sustainability issues: society, energy, environment,
- energy policy: the nuclear and renewable mix,
- R&D organization and cooperation: new tools for new challenges.

Papers on hydrogen, solar and other alternative energies as natural and mutual complements of nuclear energy in a sustainable development framework are strongly encouraged as are new proposals on how to focus R&D programs in a more efficient way. For more information contact the Conference Secretariat at icenes2009@itn.pt or fax: 351 21 994 1995. Check the website, http://www.itn.pt/icenes2009/, frequently for new and updated information.

NEUDOS-11

The 11th Neutron and Ion Dosimetry Symposium (NEUDOS-11), hosted by the Laboratory for Accelerator-Based Sciences (iThemba LABS), will be held October 12–16, 2009, in Capetown, South Africa. The Symposium is being held under the auspices of the European Dosimetry Group (EURADOS). All previous Symposia in the series, which began in 1972, have been held in Western Europe.

A full and diverse scientific program will be offered which will encompass the complete range of neutron and ion dosimetry topics. In addition, both oral and poster "young investigators" sessions will be

held. At these sessions presentations on any topic related to the dosimetry of any radiation modality (i.e., not limited to neutron or ion dosimetry) can be presented.

Check the website, http://www.neudos11.tlabs.ac.za, frequently for new information. You may also contact Dr. D. Jones / Ms. N. Haasbroek, iThemba LABS, P O Box 722, Somerset West 7129, South Africa (phone +27 21 843 1259 / 1032, fax +27 21 843 3525, email Neudos11@tlabs.ac.za).

CALENDAR

August 2008

CAARI-2008, August 10–15, 2008, Fort Worth, TX. Contact: Ms. Margaret Hall, Conference Secretary, CAARI-2008, University of North Texas, PO Box 311427, Denton, TX 76203-1427 (phone 940-565-3250, fax 940-565-2227, email caari@unt.edu) url www.caari.com.

September 2008

2008 IHLRW, "Steps Toward Reality for Safe Disposal," Sept. 7–11, 2008, Knoxville, TN. Contact: ANS Registrar (phone 708-579-8316, email: registrar@ans.org) url http://www.ans.org/meetings/calendar.cgi?d=9-7-2008.

Introduction to MCNP using the MCNP/MCNPX Visual Editor, Sept. 8–12, 2008, Richland, WA. Contact: http://www.mcnpvised.com/index.html.

MACCS2 user workshop, Sept. 8, 2008, Bethesda, MD. Contact: Larry L. Humphries, Sandia National Laboratory (email llhumph@sandia.gov) url http://melcor.sandia.gov/.

MELCOR user workshop, Sept. 9–15, 2008, Bethesda, MD. Contact: Larry L. Humphries, Sandia National Laboratory (email llhumph@sandia.gov) url http://melcor.sandia.gov/.

PHYSOR'08, Sept. 14–19, 2008, Interlaken, Switzerland. Contact: info@physor2008.ch, url http://www.physor2008.ch/.

18th Topical Meeting on the Technology of Fusion Energy (18th TOFE), Sept. 28–Oct. 2, 2008, San Francisco, CA. Contact: General Chair: Jeff Latkowski, 18th TOFE Meeting, 4435 First Street #155, Livermore, CA 94551 (phone 925-423-9378, fax 925-424-6401, email: latkowski@llnl.gov) url http://www.18th-tofe.com/.

October 2008

6th Joint INMM/ESARDA Workshop, Oct. 6–9, 2008, Roppongi, Tokyo. Contact: Jim Larrimore, Workshop Co-Chair, Chair, INMM International Safeguards Division (phone +1 858-509-9604, fax +1 858-509-2890, email JamesLarrimore@san.rr.com) or Gotthard Stein, Workshop Co-Chair, Vice-Chair, INMM International Safeguards Division (phone +49 228-676988, fax +49 2461-61-2496, email g.stein@fz-juelich.de). url http://www.inmm.org/events/esarda08.cfm.

ARIA 2008, Oct. 13–17, 2008, Villigen, Switzerland. Contact: Daniela Lerch, Secretary (phone +41 56 310 33 82, email daniela.lerch@psi.ch) url http://aria.web.psi.ch.

SCALE 5.1 TSUNAMI Training Course, October 13–17, 2008, Budapest, Hungary. Contact: Cristina Lebunetelle, OECD/Nuclear Energy Agency Data Bank (email: programs@nea.fr, fax +33 1 45241109).

SCALE Training Course–KENO Va, Oct 13–17, 2008, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/course_description.htm.

PBNC2008, October 13-18, 2008, Aomori, Japan. Contact: info@pbnc2008.org, url http://www.pbnc2008.org/.

12th International Congress of the International Radiation Protection Association (IRPA 12), Oct. 19–24, 2008, Buenos Aires, Argentina. Contact: secretariat@irpa12.org.ar, url www.irpa12.org.ar.

SCALE Training Course– ORIGEN-ARP/TRITON, Oct. 20–24, 2008, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/course_description.htm.

5th Workshop on Neutron Measurements, Evaluations and Applications Nuclear Data for Sustainable Nuclear Energy, Oct. 27–29, 2008, Ljubljana, Slovenia. Contact: Carmen Cabanillas Platero European Commission Joint Research Centre, Retieseweg 111, B-2440 Geel, Belgium (phone +32 (0)14 571 411, fax+32 (0)14 571 862, email jrc-irmm-nemea-5@ec.europa.eu) url http://candide.nri.cz/nemea.php.

SCALE Training Course– KENO-VI/MAVRIC, Oct. 27–31, 2008, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/course_description.htm.

November 2008

13th International Conference on Neutron Capture Therapy, Nov. 3–7, 2008, Florence, Italy. Contact: ICNCT-13 Secretary General (icnct-13@pv.infn.it) url http://www.pv.infn.it/icnct-13/.

Introduction to MCNP using the MCNP/MCNPX Visual Editor, Nov. 3–7, 2008, Reno, NV. Contact: http://www.mcnpvised.com/index.html.

SCALE Training Course– TSUNAMI Sensitivity/Uncertainty Tools Course, Nov. 3–7, 2008, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/course_description.htm.

International Workshop on Gamma Spectrometry Analysis Codes for U and Pu Isotopics, Nov. 3–7, 2008, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: Alena Zhernosek (phone 865-241-2552, email zhernosekav@ornl.gov) url http://www.inmm.org/events/gamma/index.cfm.

American Nuclear Society: 2008 Winter Meeting, "Nuclear Power—Ready, Steady, Go," Nov. 9–13, 2008, Reno, NV. Contact: http://www.ans.org/meetings/index.cgi?c=n.

LOWRAD 2008, Nov. 27–29, 2008 Lisbon, Portugal. Contact: Margarida Goulart de Medeiros (phone +351 21 994 6347, fax +351 21 994 1995), Octávia Monteiro Gil (phone +351 21 994 6344, fax +351 21 994 1995), or Secretariat, Luisa Oliveira (email lowrad2008@itn.pt), Nuclear and Technological Institute Department of Radiological Protection and Nuclear Safety Estrada Nacional 10, 2686 - 953 Sacavém, Portuga,. url http://www.lowrad2008.itn.pt/index.html.

February 2009

CONTE 2009, Feb. 8–11, 2009, Jacksonville, FL. Contact: Kent W Hamlin (INPO, email HamlinKW@INPO.org) and Brian K. Hajek (Ohio State University, email hajek.1@osu.edu) url http://www.ans.org/meetings/calendar.cgi?d=2-8-2009.

April 2009

Advances in Nuclear Fuel Management IV, April 12–15, 2009, Hilton Head, SC. Contact: General Chair John Siphers (phone 919-546-4032, email john.siphers@pgnmail.com), or Technical Program Co-chairs Ivan Maldonado (phone 865-974-7562, email imaldona@utk.edu) and Atul Karve (phone 910-675-5802, email atul.karve@gnf.com) url http://anfm2009.org.

May 2009

2009 International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics, May 3–7, 2009, Saratoga Springs, NY. Contact: Ray Gamino (ray.g.gamino@lmco.com) url http://local.ans.org/ne-ny/topical_2009_neny.html.

June 2009

3rd International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry and Workshop on Alpha-Emitting Radionuclides in Therapy, June 13–17, 2009, Toronto, Canada. Contact: George Sgouros (gsgouros@jhmi.edu) or Michael Lassmann (Lassmann_M@klinik.uni-wuerzburg.de) url www.snm.org.

14th International Conference on Emerging Nuclear Energy Systems (ICENES-2009), June 29–July 3, 2009, Ericeira, Portugal. Contact: Conference Secretariat at icenes2009@itn.pt (fax: 351 21 994 1995) url http://www.itn.pt/icenes2009/.

October 2009

NEUDOS-11, October 12–16, 2009, Capetown, South Africa. Contact: Dr D Jones / Ms N. Haasbroek, iThemba LABS, P O Box 722, Somerset West 7129, South Africa (phone +27 21 843 1259 / 1032, fax +27 21 843 3525, email Neudos11@tlabs.ac.za) url http://www.neudos11.tlabs.ac.za.