
Radiation Safety Information Computational Center



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All business proceeds on beliefs, or judgment of probabilities, and not on certainties.—Charles W. Eliot

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The NEA and the Russian Federation sign a Joint Declaration on Co-operation

A joint declaration on co-operation was signed on 21 March 2007 in Moscow during a ceremony attended by officials from the NEA and the Russian Federation agencies involved in its implementation. Konstantin Pulikovskiy, Chairman of the Federal Environmental, Industrial and Nuclear Supervision Service (Rostekhnadzor), signed on behalf of the Russian Federation and Director-General Luis Echávarri signed on behalf of the NEA. Commenting on this noteworthy event, the NEA Director-General Luis Echávarri said, “This joint declaration is highly significant and an important step towards strengthening ties between the Russian Federation and the NEA. Russian participation will enhance the work of the NEA pool of over 3000 international nuclear experts.” The joint declaration opens the way for the Russian Federation to participate as an observer in all of the Agency's standing technical committees and their working groups. More information is available at www.nea.fr/html/general/press/2007/2007-01.html.

Chauncey Starr, Manhattan Project Veteran, Dead at 95

Chauncey Starr, an Oak Ridge Manhattan Project veteran who helped found the Electric Power Research Institute (EPRI) in 1972, died April 17 just after attending an EPRI event in his honor. He was 95.

During his career, Starr served as vice president of Rockwell International, where he founded and became president of its Atomics International Division. He researched isotope separation technology at Oak Ridge National Laboratory during World War II, after which he helped develop the first non-military nuclear reactor and the first reactor used in space. He served as dean of the University of California, Los Angeles School of Engineering and Applied Sciences, from 1966 to 1973. A 1969 paper he published in the journal *Science*, "Social Benefits Versus Social Risks," is considered the starting point of the field of risk analysis.

Starr published more than 400 technical and scientific articles and received numerous honors, including the American Nuclear Society's (ANS) George C. Laurence Award for Pioneering Contributions to Nuclear Safety (2006), the National Academy Industry of Engineering's Arthur M. Bueche Award (2006) and the National Medal of Technology awarded by President George H. W. Bush (1990).

Starr received a degree in electrical engineering in 1932 and a doctorate in physics in 1935 from Rensselaer Polytechnic Institute. He was a research fellow in physics at Harvard University. In addition, he was a member and past vice president of the National Academy of Engineering, founder and past president of ANS, member and past director of the American Association for the Advancement of Science, a foreign member of the Royal Swedish Academy of Engineering Sciences, and an officer of the French Legion of Honor.

At the time of his death, Starr had been working on projects involving risk-based decision analysis of nuclear plant investments and the development of a "SuperGrid" utilizing superconductors to transport electricity with near-zero energy losses.

ANS News

Apply for PWANS Funding— The Professional Women in the ANS (PWANS) is committed to encouraging women to enter the field of nuclear science and technology. Part of the plan to fulfill this commitment includes supplemental funding (up to a maximum of \$500) to an ANS female student member to cover travel, hotel, and meal expenses for attending an ANS national meeting (either the Annual Meeting in June or the Winter Meeting in November). Applications must be submitted by **September 18** for the November meeting. The Application for Travel Funds can be found at <http://committees.ans.org/pwans/Students.htm>.

Change to the Computer Code and Data Collection

[CCC-733/PENELOPE2006](#)

The Facultat de Fisica (ECM) at Universitat de Barcelona and Universitat Politècnica de Catalunya de Barcelona, Spain, through the Nuclear Energy Agency Data Bank, Issy-les-Moulineaux, France, contributed PENELOPE2006. This code system performs Monte Carlo simulation of coupled electron-photon transport in arbitrary materials for a wide energy range, from a few hundred eV to about 1GeV. Photon transport is simulated by means of the standard, detailed simulation scheme. Electron and positron histories are generated on the basis of a mixed procedure, which combines detailed simulation of hard events with condensed simulation of soft interactions. A geometry package called PENGEOm permits the

generation of random electron-photon showers in material systems consisting of homogeneous bodies limited by quadric surfaces, i.e. planes, spheres, cylinders, etc. Many new features and enhancements are included in this version which replaces PENELOPE2001 in the RSICC code collection.

PENELOPE2006 runs on Pentium personal computers under either Windows XP or Linux. The code will run on almost any operating system supporting a FORTRAN 77 compiler and is FORTRAN 90 compatible. A Fortran compiler is required on all computers as the user must supply the main program for his particular problem. The authors recommend GNU Fortran 77 or GNU Fortran 95 compilers. Some other compilers which have been used include Compaq Visual Fortran 6.6, Intel 9.0, Lahey/Fujitsu 5.5h and Absoft. To plot the results, you need a plotting program. GNUPLOT is recommended. Some graphic tools that run under MS-Windows 9x/NT/2000/XP are included. GVIEW2D, GVIEW3D and GVIEWC are geometry viewers/debuggers that display 2- or 3-dimensional images of the geometry. SHOWER displays showers produced by primary particles of a given kind and energy in a slab. Windows executables are included for these viewers, but source codes are not provided.

The package is transmitted on a CD which includes the referenced documents in PDF files, PENELOPE source codes, graphic tools, data files and sample problems. The code system is distributed in two formats: a self-extracting Windows file and a Unix tar file. Reference: Workshop Proceedings Barcelona, Spain, OECD ISBN 92-64-02301-1 (July 2006). Fortran; PC under Windows or Linux (RSICC ID: C00733PC58600)

CCC-734/TRIPOLI-4 version 4.3.3

The Commissariat à l'énergie atomique, CEA/SACLAY, Cedex, France, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Moulineaux, France, contributed this Monte Carlo code system to RSICC. TRIPOLI-4 Version 4.3.3 solves the transport equation for neutral particles in general three-dimensional geometrical configurations. The following problems can be treated:

- neutron, photon, coupled neutron photon transport with fixed sources both time dependent and time independent;
- critical problems without fixed source, research of multiplication factor due to fission and determination of neutron flux in fundamental mode;
- neutron sub-critical problems with fixed sources and multiplication by fission, and
- electron-photon cascade shower.

The TRIPOLI-4 code is used essentially for four major classes of applications: shielding studies, criticality studies, core physics studies and instrumentation studies. It computes particle fluxes and currents and several related physical quantities such as reaction rates, dose rates, heating, energy deposition, effective multiplication factor, perturbation effects due to density, concentration or partial cross-section variations.

TRIPOLI-4 can use four different types of cross-section representations:

- full pointwise representation of cross-sections produced by NJOY processing code system. The cross-section files are converted into the XDR portable binary format.
- full self-shielded, homogenized multigroup cross-sections produced by the CEA lattice code APOLLO-2,
- multigroup cross-sections with probability-tables representation, and
- ENDL cross sections.

The following data libraries are distributed with the TRIPOLI-4.3.3:

ENDFB6R4: neutron, gamma data library,

ENDL: gamma data library,

JEF2: neutron, gamma data library,

Mott-Rutherford: electron, positron cross-section library, and

Qfission: energy release during fission library.

TRIPOLI-4 has run on workstations and on massively parallel machines (Cray, Compaq) under Unix or Linux operating systems. Fortran and C compilers are required if one cannot use the developers' executables for SUN, IBM, HP, Digital OSF1, and Linux PCs which are included. At RSICC, TRIPOLI was tested by running the developers' executables on an AMD Opteron under Red Hat Enterprise Linux WS release 4 and on IBM RS/6000 under AIX Version 5.1. At NEADB, TRIPOLI was tested on a Pentium III under RedHat Linux 7.2 with f77 vers. 0.5.26 and gcc vers. 2.96.

The package is transmitted on a CD which contains TRIPOLI reports, source code, scripts, executable files, data files and test cases in a Unix tar file. References: CEA-R-6044 (November 2003) and CEA-R-6043 (November 2003). Fortran 77 and C; SUN, IBM, HP, Digital, SGI, Cray, Compaq and Linux based PCs (RSICC ID: C00734MNYCP00).

PSR-538/P-CARES 2.0.0

Brookhaven National Laboratory, Upton, New York, and U. S. Nuclear Regulatory Commission, contributed P-CARES 2.0.0. The Probabilistic Computer Analysis for Rapid Evaluation of Structures was developed for NRC staff to determine the validity and accuracy of the analysis methods used by various utilities for structural safety evaluations of nuclear power plants. P-CARES provides the capability to effectively evaluate the probabilistic seismic response using simplified soil and structural models and to quickly check the validity and/or accuracy of the SSI data received from applicants and licensees. The code is organized in a modular format with the basic modules of the system performing static, seismic, and nonlinear analysis. P-CARES is an update of the CARES program developed at Brookhaven National Laboratory during the 1980's. A major improvement is the enhanced analysis capability in which a probabilistic algorithm has been implemented to perform the probabilistic site response and soil-structure interaction (SSI) analyses. This is accomplished using several sampling techniques such as the Latin Hypercube sampling (LHC), engineering LHC, the Fekete Point Set method, and also the traditional Monte Carlo simulation. This new feature enhances the site response and SSI analysis such that the effect of uncertainty in local site soil properties can now be quantified. Another major addition to P-CARES is a graphical user interface (GUI) which significantly improves the performance of P-CARES in terms of the inter-relationships among different functions of the program, and facilitates the input/output processing and execution management. It also provides many user friendly features that would allow an analyst to quickly develop insights from the analysis results.

P-CARES 2.0.0 runs on Pentium personal computers under Windows XP SP2 and is expected to run on almost any recent computer. RSICC tested the included Windows executable on a Pentium 4 CPU 2.26 GHz running Windows XP SP2. The computing core of P-CARES, which includes the free field convolution analysis, kinematic interaction, structural analysis, and some other frequently used utilities, is written in standard Fortran 90/95 and is portable to other platforms. The rest of the modules, including the probabilistic simulation, execution management, and the GUI, are written in the Python programming language that is open source and freely available to all popular platforms. The GUI is developed in wxPython, a Python binding to the C++ wxWidgets GUI library that is available to multiple platforms. These programming tactics in P-CARES development ensure its portability over multiple platforms. Reference: NUREG/CR-6922:BNL-NUREG-77338-2006 (January 2007). Fortran 90/95 and Python; Pentium running Windows XP (RSICC ID: P00538PC58600).

DLC-228/MCJEFF3.1NEA

The OECD Nuclear Energy Agency Data Bank, Issy-Les Molineaux, France, contributed this continuous-energy neutron cross section library for use with the MCNP code from Los Alamos National Laboratory. Processed from the JEFF-3.1 evaluated nuclear data library with LANL's NJOY99.90 code, MCJEFF3.1NEA is a multi-temperature, ACE-format, neutron library for a wide range of ten temperatures depending on application needs: 300, 400, 500, 600, 700, 800, 900, 1000, 1200 and 1800

degrees Kelvin. The library is comprised of 381 materials and some thermal scattering evaluations. The processed data also contain production and gas production data whenever such data are contained in JEFF-3.1. Kinematic KERMA factors and total damage energy production data were processed. The nuclides processed include all those of the General Purpose Library and Thermal Scattering Library, including important light nuclei, structural materials, fission products, control rod materials and burnable poisons, all major and minor actinides. In addition to up90, some updates are required for correct processing of JEFF-3.1 with NJOY99.90 and are provided as a separate set of patch files. The NJOY99.90 inputs used for processing each nuclide are provided. The data libraries are transmitted on three DVDs in WinZIP files which include data libraries and xsdir files. Uncompressed ASCII files are about 1.2 GB for each temperature. Reference: OECD NEADB, NEA/NSC/DOC (2006)18 (May 2006). Many computers (D00228MNYCP00).

University Corner

Rachel Slaybaugh, two-time NESLS* intern, wins Best Paper at ANS Student Conference—

The March 29-31, 2007 American Nuclear Society Student Conference was held at Oregon State University. Rachel Slaybaugh, who interned at ORNL under the Nuclear Engineering Science Laboratory Synthesis (NESLS), presented a paper on the work she had done during her NESLS internship. Her paper titled “Radiation Treatment Planning Using Discrete Ordinates Codes,” won Best Paper in Health Physics. Rachel Slaybaugh was mentored by NSTD researchers Mark Williams, Douglas Peplow, Dan Ilas, Dick Lillie and Bernadette Kirk. Rachel finished her undergraduate degree in nuclear engineering at Pennsylvania State University and is currently a graduate student at the University of Wisconsin. Her advisor is Paul Wilson.

University of Tennessee's Department of Nuclear Engineering Celebrates 50 Years

The UT Department of Nuclear Engineering (UTNE) celebrated its 50th anniversary at a gala event on March 3, 2007, at the new Knoxville Convention Center with nearly 300 people attending, including corporate sponsors (see <http://www.engr.utk.edu/nuclear/sponsorship.html>); and sponsorships are still available. Revenue generated by Celebration Sponsorships will be used for undergraduate scholarships, graduate fellowships, faculty development, and general infrastructure support for the department. A link to the recorded program can be found at <http://www.engr.utk.edu/nuclear/anniversary.html>. Dr. Tony Buhl, a 3-time UTNE graduate, served as the Master of Ceremonies for the program. A pictorial history of the department slide show can also be viewed at [pictorial history of UTNE](#).

The program included an Overview of the History of the Department by Dr. John Prados, UT Vice President Emeritus, and a Special Tribute to Dr. Pete Pasqua, department founder and UTNE Department Head for 31 years, by Dr. Bill Snyder, UT Chancellor Emeritus. Dr. Snyder also presented a special plaque to the Pasqua family in honor of Dr. Pasqua and a bouquet of roses to Mrs. Pete Pasqua. Dr. Way Kuo, UT Dean of Engineering, presented service recognition plaques to Dr. Tom Kerlin (Department Head, 1988-1996) and Dr. Lee Dodds (Department Head, 1997-present). Dr. Kuo also announced the university's plan to provide new facilities for the Nuclear Engineering Department, which will be funded by both state appropriations and private donations. The evening included a telephone conversation with Dr. Ted Mott, UT Professor Emeritus of Nuclear Engineering, a popular UTNE instructor in the early days of the department, now living in South Africa.

*[Nuclear Engineering Science Laboratory Synthesis](#), a research initiative for students and faculty working in physics and nuclear engineering.

Since it was established in 1957, the program has had three department heads: Dr. Pete Pasqua (for whom the building that houses the department, Pasqua Hall, is named) founded the department and served as department head from 1957-1988; Dr. Tom Kerlin, served from 1988-1996; and the current department head is Dr. H.L. "Lee" Dodds.

The UT program is now the third-largest nuclear engineering program in the U.S., based on total student enrollment, and is ranked 11th nationally by *U.S. News and World Report* among approximately 40 nuclear engineering programs in the U.S.

Dr. Tony Buhl, President and CEO, EnergX, and General Manager, Oak Ridge TRU Waste Site, Oak Ridge, Tennessee, a three-time graduate of the program, chaired the event.

UT Office of Media Relations, February 13, 2007

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](#)

2007 Schedule		
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 the MCNPX Workshops web site <http://mcnpx.lanl.gov/>. The cost for U.S. workshops is \$2,000 (U.S.) with a \$300 early registration discount (30 days before the scheduled workshop). Workshops with fewer than 12 registrants on the early registration date are subject to cancellation or rescheduling. To register send an email to nbutner@lanl.gov indicating the workshop of interest to you.

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-42](#)), August 13–18, 2007.

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 30, 2007. 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-42, 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>.

Fall 2007 SCALE Training Courses at ORNL

Date	Title	Description
October 15–19	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 22–26	KENO V.a	CSAS/KENO V.a (including KENO3D and GeeWiz)
October 29– November 2	TSUNAMI* Sensitivity/ Uncertainty Tools Course	1-D and 3-D sensitivity/uncertainty analysis using XSDRNPM and KENO V.a
*Experienced KENO users only		

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.

Introductory and Advanced MCNP Visual Editor Training

The Introductory class will be held September 17–21, 2007, in Richland, Washington. It will be 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. Computer demonstrations and exercises will focus on creating and interrogating input files with the Visual Editor. Demonstrations of advanced visualization work using MCNP will also be made. The advanced class assumes the user has experience using MCNP and focuses on Visual Editor topics.

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>.

McGill Workshop on Monte Carlo Techniques in Radiotherapy Delivery and Verification

“Monte Carlo Techniques in Radiotherapy Delivery and Verification: Third McGill International Workshop” will be held May 29–June 1, 2007, at McGill University in Montreal. This workshop intends to cover recent Monte Carlo code developments, applications to higher level biological models as well as the role of MC simulations in clinical applications related to improved estimations of delivered dose and the verification of delivered dose. In tune with the two previous workshops (2001, 2004) the present workshop setup encourages in-depth discussions on specialized topics. To this end, the number of participants will be limited to around 100. For more information and to view the preliminary program please see the link: <http://www.medphys.mcgill.ca/~mcworkshop2007/>.

Note that the timeframe of this workshop is the week just before the “International Conference on the Use of Computers in Radiation Therapy (ICCR 2007)” in Toronto. Topics covered in the McGill workshop are designed to complement the program of the ICCR 2007 meeting (<http://www.iccr2007.org/>).

International Conference on Emerging Nuclear Energy Systems (ICENES 2007)

The committee for the 13th International Conference on Emerging Nuclear Energy Systems (ICENES 2007) will 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/>.

XVth International Conference on the Use of Computers in Radiation Therapy

The XVth International Conference on the Use of Computers in Radiation Therapy (ICCR 2007) will be held in Toronto, Canada, from June 4–7, 2007. This conference offers the opportunity to explore advancements in radiation oncology through investigations in modeling of biological systems, interactive radiation therapy treatment planning, deformation and shape change, schemes for adaptation/feedback, multi-modality image registration and image segmentation, and systems for fully four-dimensional radiotherapy. Registration and program details can be found at <http://www.iccr2007.org/>. If you require additional information, please contact the Secretariat at iccr@rmp.uhn.on.ca.

Practical MCNP for the Health Physicist, Medical Physicist, and Rad Engineer

DATES: June 18–22, 2007

FEE: \$1,500 per person

PLACE: The MESA Complex, Room 130, University of New Mexico-Los Alamos Campus

Monte Carlo type calculations are ideally suited to solving a variety of problems in radiation protection and dosimetry. The Los Alamos MCNPTM code is a general and powerful Monte Carlo transport code for photons, neutrons, and electrons, and can be safely described as the “industry standard.” This course is aimed at the HP, medical physicist, and rad engineer with no prior experience with Monte Carlo techniques. The focus is almost entirely on the application of MCNPTM to solve a variety of practical problems in radiation shielding and dosimetry. The intent is to “jump start” the student toward using MCNP productively. With a little practice and study of the examples, many will find they are able to solve problems that have, in the past, been out of reach.

Course content: Extensive interactive practice sessions are conducted on a personal computer. Topics will include an overview of the MCNP code and the Monte Carlo method, input file preparation, geometry, source definition, standard MCNP tallies, interpretation of the output file, exposure and dose rate calculations, radiation shielding, photon skyshine, detector simulation and dosimetry. Students will be provided with a comprehensive class manual and a CD containing all of the practice problems. This course has been granted 32 Continuing Education Credits by the AAHP (2005-00-003), and 4.5 CM points by the American Board of Industrial Hygiene. The course is offered by the Health Physics Measurements Group at the Los Alamos National Laboratory and is co-sponsored by RSICC.

Registration is available online at: <http://drambuie.lanl.gov/~esh4/mcnp.htm>. Make checks payable to the University of California (checks must be in U.S. dollars on a U.S. bank) and mail together with

name, address, and phone number to David Seagraves, Mail Stop J573, Los Alamos National Laboratory, Group RP-2, MCNP Class, Los Alamos, NM 87545. Inquiries regarding registration and class space availability should be made to David Seagraves, 505-667-4959, fax: 505-665-7686, e-mail: dseagraves@lanl.gov. Technical questions may also be directed to Dick Olsher, 505-667-3364; e-mail: dick@lanl.gov.

Please note that this course is separate from and independent of the courses being offered by the MCNP and MCNPX Teams at LANL.

[Dick Olsher](#)

ANS Annual Meeting

The 2007 ANS Annual Meeting will be held June 24–28, 2007, in Boston. The theme, “It’s all About the People: The Future of Nuclear,” 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

General Co-chairs of the meeting are J. Art Stall of Florida Power & Light and David P. Barry of Shaw Stone and Webster Nuclear Services. Raymond Klann of Argonne National Laboratory is the Technical Program Chair. Information may be found at <http://www.ans.org/meetings/index.cgi?c=n>.

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-reviewed 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://www.inspi.ufl.edu/space07/index.html>, or contact Lynne Schreiber, Conference Administrator, (phone 352-392-9722, fax 352-392-8656, email space@ans.org).

[AAPM Annual Meeting](#)

The American Association of Physicists in Medicine (AAPM) is holding its 49th Annual Meeting July 22–26, 2007, in Minneapolis, Minnesota. The program will offer participants a significant opportunity to gain practical knowledge on emerging technical and professional issues. A major focus of the scientific program is the increasing integration of advanced imaging concepts in the routine practice of various therapies, especially radiotherapy. The scientific program will include the highest quality abstracts in oral, moderated poster, and poster sessions on basic research and clinical application topics in medical imaging and therapeutic medical physics. Continuing education will be offered through daily courses to keep the membership up to date on the current and new technologies and techniques. The registration and up-to-date meeting information can be found at <http://aapm.org/meetings/07AM/>.

[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. Dr. Denis Beller (University of Nevada, Las Vegas) is the general chair of the meeting. 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. The website is <http://www.iac.isu.edu/accapp07/>.

[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. Conference topics include:

- 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. Organized by the Romanian Society for Radiological Protection (RSRP), this Regional Congress will present an opportunity to debate 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/>.

“CMPWG-II” Computational Medical Physics Working Group Workshop II

“CMPWG-II” Computational Medical Physics Working Group Workshop II will be hosted by the University of Florida, in Gainesville on September 30–Oct 3, 2007. This is the Second Computational Medical Physics Working Group Workshop (“CMPWG-II”). The first workshop was held at Oak Ridge National Laboratory in 2005 and was well-attended. Guest speakers from Shands Hospital Oncology and Radiology will discuss the unique challenges ahead for medical physics simulations in therapy and diagnostic applications. The purpose of this meeting is to provide a technical exchange of ideas and a forum for novel approaches to simulating radiation transport and dosimetry for accurate and efficient assessments for the enhancement of dose assessment, treatment planning, image quality evaluations, calibration, etc. Conference Registration is \$300/person, \$100/student participants.

Abstracts of 500–1000 words, due by **August 1, 2007**, may be submitted to sjoden@ufl.edu. Full papers in MS-Word or PDF format for approved abstracts are due upon arrival at the workshop and will be published as Technical Proceedings. Instructions for accepted papers will be provided at the time of acceptance, on or before 15 August 2007. “Best” quality full papers presented upon registration will be selected and forwarded for further peer review and publication in a special edition of the *Nuclear Technology Journal*, a publication of the American Nuclear Society. A template will be made available for download at <http://cmpwg.ans.org>. The Technical Program Committee will select the best paper submitted by a graduate.

The conference will be held at the Hilton Hotel and Conference Center; reservations may be made directly with the hotel by specifying the rate code to be supplied later. Questions on facilities related to the workshop can be directed to Geri Roberts, 352-392-1401, x306. For information about the conference, contact Dr. Glenn Sjoden, (352) 392-1401, x323, fax: (352) 392-3380, email: sjoden@ufl.edu.

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 guald@bologna.enea.it. Phone 39 051-6098350, fax 39 051-6098003). Details and the latest news regarding the workshop can be found at http://www.eurados.org/conrad/wg6_Bologna.htm.

10th International Nuclear Power Safety and Nuclear Education Conference



Obninsk State Technical University for Nuclear Power Engineering will host the 10th International Nuclear Power Safety and Nuclear Education Conference, October 1–7, 2007, in Obninsk. Abstracts may be submitted until May 15 on the following topics:

- Innovative nuclear systems and fuel cycle
- Nuclear education, training and knowledge preservation
- Safety fundamentals of nuclear technologies
- Advanced fuel cycles and nonproliferation
- Radiological safety and environmental protection
- Reliability, endurance and lifetime resource management

Contact the Conference Secretary, Ms. Elena Zinovieva, Obninsk State Techn. Univ. (zev@iate.obninsk.ru) for details regarding registration and paper submission.

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

May 2007

Introduction to MCNP Using the MCNP/MCNPX Visual Editor, May 7–11, 2007, Richland, WA.
Contact: randyschwarz@mcnpvised.com or <http://www.mcnpvised.com>.

ICAPP '07, International Conference on Advances in Nuclear Power Plants, May 14–16, 2007, Nice, France. Contact: Philippe Pradel, general chair, CEA Centre de Saclay, Bat 121, 91191 Gif-sur-Yvette, Cedex, France (phone 33-169-08-6190, fax 33-169-08-6185, email philippe.pradel@cea.fr).

2007 North American Young Generation in Nuclear (NA-YGN) Annual Workshop, May 22–23, 2007, Aventura (North Miami Beach), Florida. Contact: Lisa Stiles Shell (phone 202.739.8143, email lss@nei.org) url <http://www.nei.org/>.

Annual Meeting on Nuclear Technology 2007, May 22–24, 2007, Karlsruhe, Germany. Contact: Congress Office, dbcM GmbH, Kamillenweg 16-18, 53757 Sankt Augustin, Germany (phone 49-0-2241-93897-33, fax 49-0-2241-93897-12, email jk@dbcM.de).

International Conference on Nuclear Criticality Safety (ICNC 2007), May 28–June 1, 2007, St. Petersburg, Russia. Contact: Boris Ryazanov, general chair, State Scientific Center of the Russian Federation, Inst. Of Physics and Power Engineering, Bondarendko Square 1, 249020 Obninsk, Kaluga Region, Russia (email ryazanov@ippe.ru) url <http://www.icnc2007.com/>.

McGill Workshop on Monte Carlo Techniques in Radiotherapy Delivery and Verification, May 29–June 1, 2007, McGill University in Montreal. Contact: Jan Seuntjens, Medical Physics Unit, McGill University (phone 1 514 934 1934 Ext 44124, email: jseuntjens@medphys.mcgill.ca).

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/>.

ICCR 2007, June 4–7, 2007, Toronto. Contact: Secretariat (email iccr@rmp.uhn.on.ca) url <http://www.iccr2007.org/>.

MCNPX Introductory Workshop, June 4–8, 2007, Santa Fe, New Mexico. Contact: Nancy Butner, D-5 Nuclear Design and Risk Analysis Group (phone 505-667-8016, email nbutner@lanl.gov) url <http://mcnpX.lanl.gov/>.

Practical MCNP for the Health Physicist, Medical Physicist, and Rad Engineer, June 18–22, 2007, University of New Mexico-Los Alamos Campus. Contact: David Seagraves (phone 505-667-4959, fax 505-665-7686, e-mail: dseagraves@lanl.gov) url <http://drambuie.lanl.gov/~esh4/mcnp.htm>

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 <http://www.inspi.ufl.edu/space07/index.html>.

July 2007

Sixth International Symposium on Physical, Molecular, Cellular, and Medical Aspects of Auger Processes, July 5–7, 2007, Harvard Medical School, Boston, MA. Contact: Amin I. Kassis, PhD, Radiation Biology and Experimental Radionuclide Therapy, Harvard Medical School, 200 Longwood Avenue, Boston MA 02115 (phone 617-432-7777, fax 617-432-2419, email amin_kassis@hms.harvard.edu or Auger6@hms.harvard.edu) url <http://medapps.med.harvard.edu/Auger6/>.

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

Advanced Visual Editor for Experienced MCNP/MCNPX Users Training, July 16–20, 2007, Richland, WA. Contact: randyschwarz@mcnpvised.com or <http://www.mcnpvised.com>.

AAPM Annual Meeting, July 22–26, 2007, Minneapolis, MN. Contact: Lisa Rose Sullivan (email rose@aapm.org) url <http://aapm.org/meetings/07AM/>.

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/>.

August 2007

42nd Tennessee Industries Week, Specialized Short Courses for Nuclear and Other Industries, Aug. 13–17, 2007, University of Tennessee Main Campus, Knoxville, TN. Contact: Tennessee Industries Week, University of Tennessee, Nuclear Engineering Department, 207 Pasqua Building, Knoxville, TN 37996-2300 (email kengland@utk.edu) url <http://www.engr.utk.edu/nuclear/TIW/tiw42reg.html>.

September 2007

ICEM'07, the 11th International Conference on Environmental Remediation and Radioactive Waste Management, Sept. 2–6, 2007 Bruges, Belgium. Contact: Gary Benda, WM'07 Conference Organizer, STUDSVIK/RACE, LLC, (phone +1-803-345-2170, email GBenda_use@hotmail.com) url <http://icemconf.com/index.htm>.

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>.

2007 Decommissioning, Decontamination, and Reutilization Meeting and Expo, Sept. 16–19, 2007, Chattanooga, Tennessee. Contact: Joe Carignan, General Chair (phone 423-875-4555, email jecarignan@aol.com) url <http://www.ans.org/meetings/index.cgi?c=t#ddr07>.

MCNPX Advanced Workshop, Sept 17–21, 2007, Santa Fe, New Mexico. Contact: Nancy Butner, D-5 Nuclear Design and Risk Analysis Group (phone 505-667-8016, email nbutner@lanl.gov) url <http://mcnpx.lanl.gov/>.

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/>.

“CMPWG-II” Computational Medical Physics Working Group Workshop II, September 30–Oct 3, 2007, University of Florida-Gainesville. Contact: Dr. Glenn Sjoden, (352) 392-1401, x323, fax: (352) 392-3380, email: sjoden@ufl.edu.

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 guald@bologna.enea.it, phone 39 051-6098350, fax 39 051-6098003) url: <http://www.eurados.org/>.

10th International Nuclear Power Safety and Nuclear Education Conference, October 1–7, 2007, Obninsk, Russia. Contact: Ms. Elena Zinovieva, Obninsk State Techn. Univ. (zev@iate.obninsk.ru).

SCALE Training: ORIGEN-ARP/TRITON Course, Oct. 15–19, 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: KENO-VI Course, Oct. 22–26, 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, October 22–26, 2007, Europe. Contact: Nancy Butner, D-5 Nuclear Design and Risk Analysis Group (phone 505-667-8016, email nbutner@lanl.gov) url <http://mcnpx.lanl.gov/>.

SCALE Training: TSUNAMI Sensitivity/Uncertainty Tools Course, Oct. 29–Nov. 2, 2007, Oak Ridge National Laboratory, Oak Ridge, TN. Information and registration can be found at <http://www.ornl.gov/sci/scale/training.htm>.

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.

April 2008

11th International Conference on Radiation Shielding (ICRS-11) and the 15th Topical Meeting of the Radiation Protection and Shielding Division (RPSD-2008) of the American Nuclear Society, April 13–18, 2008, Callaway Gardens, Pine Mountain, Georgia. Contact: General Chair, Nolan Hertel, Georgia Institute of Technology (email nolan.hertel@me.gatech.edu) or General Co-Chair, Pedro Vaz, ITN, Portugal (email pedrovaz@itn.pt) url <http://icrs11.me.gatech.edu/index.htm>.