Radiation Safety Information Computational Center

Oak Ridge National Laboratory
POST OFFICE BOX 2008
OAK RIDGE, TENNESSEE 37831-6362
Managed by
UT-Battelle, LLC
for the U.S. Department of Energy
under contract DE-AC05-00OR22725

Phone No. 865-574-6176
FAX 865-574-6182
Internet: PDC@ORNL.GOV
http://www-rsicc.ornl.gov/rsic.html

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"You will never 'find' time for anything. If you want time, you must make it." — Charles Bixton

HAPPY NEW YEAR!

Five Honored as Fellows of the American Nuclear Society

The American Nuclear Society (ANS) honored five members as ANS Fellows during the Society's winter meeting in Reno, Nevada, in November 2001. ANS bestows the Fellow designation to recognize outstanding accomplishment by members in one or more disciplines or fields of nuclear science and engineering. The five disciplines are: Notable original research or invention in the nuclear field; Scientific or technical leadership in a nuclear enterprise of substantial scope; Outstanding leadership as a teacher in the nuclear field; Outstanding leadership in design, engineering and operating efforts in the nuclear field; and Outstanding efforts in the areas of nuclear health, safety and regulation. The newest ANS Fellows are:

Dr. Marvin L. Adams, associate professor of nuclear engineering at Texas A&M University. Adams, of College Station, Texas, was recognized for the development and analysis of advanced spatial discretization methods, as well as the development and analysis of rapidly convergent interactive methods for transport challenges. He also was recognized for his excellence in teaching and advising undergraduate and graduate nuclear engineering students.

Steven A. Arndt, team leader for instrumentation and control with the U.S. Nuclear Regulatory Commission. Arndt, a resident of Damascus, Maryland, was recognized for extraordinary leadership in promoting the safe operation of nuclear reactors through advances in the areas of nuclear instrumentation and control, software quality assurance, reliability engineering and nuclear power plant simulators.

Dr. Nam Zin Cho, professor of nuclear engineering at the Korea Advanced Institute of Science and Technology. Cho, of Taejon, Korea, was recognized for his achievements in developing reactor physics and transport theory methods used worldwide in laboratories and industry, and for inspiring a new generation of nuclear engineers in academia, research institutes and industry in Korea.

Calvin M. Hopper, senior distinguished research and development engineer with the Oak Ridge National Laboratory. Hopper, of Clinton, Tennessee, was recognized for his outstanding effort in the field of nuclear criticality safety, and for his leadership roles in developing national and

international consensus standards, in developing and directing technology support programs and preparing guidance on the elements of a criticality safety program.

Dr. George J. Rotariu, a consultant in nuclear energy and retired senior scientist for the Division of Nuclear Safety in the U.S. Department of Energy's Office of Environment, Health and Safety. Rotariu, a resident of Bethesda, Maryland, was recognized for his design and management overview of construction of the first large *cobalt-60* irradiator in the United States, and his management roles for the AEC programs on process radiation and isotopic instrumentation development.

The American Nuclear Society, based in the Chicago suburb of La Grange Park, Illinois, is a not-for-profit, international, scientific and educational organization. It was established in 1954 by professionals in diverse fields to promote the advancement of engineering and science relating to the atomic, nuclear and allied sciences and arts. More than 11,000 individuals belong to the Society and exchange research, provide scholarships, hold meetings and disseminate information on nuclear science and technology.

OBITUARIES

The shielding community was saddened to learn of the passing of John L. "Kampy" Kamphouse on December 3, 2000. Kampy had served as the chairman of two teams that revised and reaffirmed two major radiation protection and shielding standards: ANS-6.4-1997 (Revision of ANSI/ANS-6.4-1985) - Nuclear Analysis and Design of Concrete Radiation Shielding for Nuclear Power Plants and ANS-6.4.2-1985; R1997 - Specification for Radiation Shielding Materials. Kampy had been a lead shield engineer at Gilbert/Commonwealth Engineers before coming to serve as a senior nuclear engineer for shielding and dose analysis for TVA's Brown Ferry's Nuclear Power stations from which he retired. He was also the dean of Bethel Bible College and had earned a doctoral degree in sacred theology and religion from Bethany Seminary in Dothan, Alabama. He will be greatly missed.

Dr. Dixon Callihan, a resident of Oak Ridge, Tennessee, for 48 years before moving to Davidson, North Carolina in 1993, died after a brief illness Sunday, December 9, 2001. Callihan was born July 10, 1908, in Scarbro, West Virginia. Dr. Callihan received his undergraduate degree from Marshall College, Huntington, West Virginia, Masters from Duke University, and Ph.D. in Physics from New York University. He was a Professor of Physics at New York University and then City College New York when, in 1941, he joined a group working with the Atomic Energy Research Project (Manhattan District Project) at Columbia University. He came to Oak Ridge in 1945 where he began a long career contributing to the many interrelated disciplines of nuclear energy. Dr. Callihan retired in 1973 from the Oak Ridge National Laboratory as associate director of the Neutron Physics Division and director of the Critical Experiments Facility, and he continued work as a consultant until 1993. He was a member of the Nuclear Standards board of the American National Standard Institute since its inception in 1957. He was editor of the American Nuclear Society's *Journal of Nuclear Science and Engineering* until 1983, and served as an administrative judge on the Atomic Safety & Licensing Board panel of the U.S. Nuclear Regulatory Commission until 1990. Dr. Callihan received the Distinguished Service Award from the American Nuclear Society in 1983 for his many significant contributions to the Society, especially his founding of the Nuclear Criticality Safety Division. He was presented with the ANS Standards Committee Service Award in 1988 for thirty years of service to the program and his participation in both national and international standards groups. In 1964, he was awarded an Honorary Doctor of Science degree by Marshall University as a leader in the development of atomic energy for peaceful uses; and he also received the Marshall University Alumni Association's Distinguished Alumnus Award in 1985. He was a fellow of the American Physical Society and the American Nuclear Society. He was preceded in death by his first wife, Alva Stroh Callihan. Surviving are his wife Mildred Martin Callihan; two stepdaughters Dr. Virginia Dalton, Tuscon, Arizona, and Nancy Chikes and her husband Peter,

Concord, North Carolina; and four step-grandchildren. Dr. Callihan was a founder and continuing supporter of the Oak Ridge Playhouse, serving as its president 1952-1955 and a member of the Board of Directors from 1963-1993. Memorials may be made to Marshall University Foundation, Inc., One John Marshall Dr., Huntington, WV 25755 or The Pines Resident Support Fund, 400 Avinger Lane, Davidson, NC 28036.

TESTING THE WATERS

The proposed courses, tutorials, etc. will be held depending on user interest and participation. For more information or support of this workshop please contact hatmakerna@ornl.gov or sartori@nea.fr.

Workshop/Tutorial (tentative) on AMPX-2000, the latest version of the AMPX cross-section processing system that is developed and maintained by the Oak Ridge National Laboratory (ORNL). AMPX-2000 processes nuclear data evaluations that conform to the Evaluated Nuclear Data File (ENDF/B) format specifications. AMPX-2000 has the capability to process ENDF/B formats through Version VI and generate continuous-energy or multigroup cross-section libraries for neutron and/or photon transport. The objective of the workshop is to introduce new and experienced users to AMPX-2000. The workshop consists of classroom instruction provided by the AMPX code developers with an emphasis on use of the code system to process nuclear data evaluations. The workshop will also provide the participants with the opportunity to use AMPX to process nuclear data evaluations. Upon completion of the workshop, participants will have an understanding of the code system and be able to use AMPX to process ENDF/B evaluations and generate cross-section data for use in radiation transport codes. The proposed Agenda for a 5-day Workshop/Tutorial follows:

Day 1 - The first day will provide an introduction to ENDF/B formats and concepts associated with cross-section data. Followed by an overview of the AMPX-2000 code system that will include a discussion of the modular design philosophy and special features associated with the code system. The history of its sponsorship, major releases, etc., will be covered. In addition, a comprehensive overview of the processing capabilities will be provided. Differences and similarities to the NJOY processing system will be reviewed as appropriate. The remaining part of the first day will be devoted to a description of the AMPX modules and procedures that are used to generate continuous-energy cross sections from ENDF/B evaluations. In addition, the AMPX modules and procedures for processing the ENDF/B collision kinematics data will be described in detail.

Day 2 - Classroom instruction for the second day will focus on the modules and procedures that are used to produce multigroup neutron and photon cross-section libraries. The morning session will emphasize the AMPX modules that relate to producing multigroup data (e.g., generating weighting spectra, resonance-parameter processing, thermal-data processing, etc.). Workshop participants will gain familiarity with the different types of data that are used to provide a multigroup dataset for transport calculations. The afternoon session will be devoted to "hands-on" exercises that emphasize the course material from the first two days of instruction. Participants will have the opportunity to prepare input for producing continuous-energy and multigroup data using AMPX-2000.

Day 3 - The third day will begin with a review of the classroom exercises from Day Two followed by additional discussions on multigroup library processing as needed. New AMPX capabilities for generating probability tables and covariance matrices will be discussed in the morning session. The afternoon session will be devoted to additional classroom exercises related to generating continuous-energy and multigroup data. In addition, workshop participants will have the opportunity to generate probability tables and process ENDF/B uncertainty data with AMPX-2000.

Day 4 - The fourth day will begin with a review of the sample problems of the preceding afternoon session followed by classroom instruction for the various resonance self-shielding treatments that are provided in the AMPX system. The material will build upon the information presented on Day Two and include discussions of modules and procedures that must be used to

prepare the appropriate data to be used in the treatments. The afternoon session will provide classroom exercises that make use of the course material presented in the morning session.

Day 5 - The fifth day will provide a review of the problems that were investigated on Day Four. A discussion of various AMPX-2000 utility modules will be provided. AMPX-2000 produces data in a wide variety of formats and has the capability to interface with the NJOY code system. The material covered on Day Five will focus on the utility modules that are needed to perform specialized data manipulation tasks (e.g., convert data between NJOY and AMPX, compare data libraries, constructing and maintaining a special energy boundary library for group structures, procedures for constructing specialized 1/ES t functions, AMPX installation procedures for different computer platforms, etc).

SCALE - Criticality, Shielding, Source Term (tentative) - see the SCALE official Web page.

Tutorials on deterministic radiation transport codes (tentatively end of 2002). The intention is to present recently developed tools for modelling 3D problems, including automated mesh generation, (X-Y-Z), (R-THETA-Z) and the visualization of the corresponding results to facilitate interpretation and for improved documentation. Methods for 3D Sensitivity Analysis / Uncertainty Analysis should also be demonstrated. The Data Bank Executive Group has strongly recommended the development of such tools. If you are interested in participating, please fill in the form.

Workshop on Computing Radiation Dosimetry with embedded training course on MCNPX - Monte Carlo Code System for Multiparticle & High Energy Applications, to be held at the Instituto Tecnologico e Nuclear (ITN), Sacavem, Lisbon, Portugal June 22-28, 2002. During the weekend of June 22-23, a series of tutorial lectures will be held followed by a daily tutorial lecture delivered by a senior expert on a subject related to the MCNPX module(s) being taught that day. The MCNPX specific training will be delivered June 24-28. If you are interested in participating, please fill in the form.

MCNP - Introductory or Advanced Course including MCNP5 Features, March 18-22 at the Imperial College, London.

PENELOPE (electron-photon transport) workshop with tutorial, (2002, RSICC, Oak Ridge, Tennessee, USA).

NRC Codes Made Available

Three U.S. Nuclear Regulatory Commission (NRC) software packages which were transferred from the Energy Science and Technology Software Center, Oak Ridge, Tennessee to RSICC were incorporated into the RSICC computer code collection. Please browse the computer code abstracts available at RSICC's www site for more information on these packages.

CCC-335/BWRGALE **CCC-485/BWR-LTAS** **CCC-633/BLT-FEMWATER**

Changes to the Computer Code and Data Collection

Two new packages were added to the computer code software and data collection; both are foreign contributions.

PSR-513/BOT3P1.0
OP SYS: Unix
Language: Fortran 77
Computers: IBM, RS/6000, Sun/DEC
Format: tar

The ENEA Nuclear Data Center, Bologna, Italy, through the OECD Nuclear Energy Agency Data Bank, Issy-Les Molineaux, France, contributed this code system for 2D- and 3D- mesh generation and graphical display of geometry and results for the DOORS deterministic transport codes. Bologna Transport Analysis Pre-Post-Processors (BOT3P) provide users of the DORT and TORT deterministic transport codes (CCC-650/DOORS-3.2) some useful diagnostic tools to prepare and check their input data files. These tools were conceived to be as general as possible for a large number of applications. They were designed to overcome some difficulties in the preparation of the geometrical model entries and of the fixed neutron source entries of the DORT/TORT input files for the shielding calculations of the VENUS-1 and VENUS-3 benchmark experiments, within the framework of the activities of the OECD/NEA Task Force on Computing Radiation Dose and Modeling of Radiation-Induced Degradation of Reactor Components (TFRDD). BOT3P consists of the following six independent programs:

RVARSCL: Reads DORT/TORT "VARSCL" sequential format files.
GGDM: Generates the geometric and material entries for DORT.
DDM: Plot program used as a DORT pre/post processor.
GGTM: Generates the geometric and material entries for TORT.
DTM2: 2D plot program used as a TORT pre/post processor.
DTM3: 3D plot program used as a TORT pre/post processor.

BOT3P programs run on DEC Alpha, Sun and IBM RS/6000 systems and are expected to run on most Unix workstations. The developer implemented BOT3P under the following UNIX systems:

DEC Alpha, OSF1 V4.0F, DIGITAL Fortran, Version 5.2;
IBM RS/6000, AIX 4.3.2, XLF 3.2.5;
Sun Ultra 5, Solaris8, Fortran 77 version 4.2.

BOT3P1.0 has not been implemented under Windows. Executables that were created at RSICC on a Pentium computer under RedHat Linux 7 with the Portland Group, Inc. compiler are included. A Fortran 77 compiler is required to compile the codes on all other computers. At RSICC, the codes were also tested on an IBM RS/6000 under AIX 4.2 with XLF 3.2.2.3. The RSCORS, Sandia National Laboratory subroutine library of graphical primitives, is required to install and run BOT. RSCORS is distributed with the CCC-650/DOORS3.2 package. The package is transmitted on a CD in a GNU compressed Unix tar file. The tar file contains the source files, test cases, implementation instructions, procedures, description of sample problem cases, and documentation. References: KT-SCG 00011 (September 5, 2001), KT-SCG 00011 (September 5, 2001), KT-SCG 00012 (September 5, 2001). Fortran 77; IBM, Sun, DEC and Linux PC (P00513/MNYWS/00).

PSR-514/VIEW-CXS
OP SYS: Windows
Language: Visual Basic
Computers: Pentium
Format: Self-extracting Windows

The Safety Research Institute, Atomic Energy Regulatory Board, IGCAR Campus, Tamilnadu, India, contributed this interactive, user-friendly code system to graphically view neutron

and gamma-ray cross-sections of isotopes, which are available in different data libraries. The names of isotopes for which the cross-sections are available is shown in a data base grid on the selection of a particular library. Routines have been developed in Visual Basic 6.0 to retrieve required information from each of the binary files or random access files. The present program can fetch data from:

1) ACE random access file used with MCNP code,
2) AMPX binary file used with KENO code,
3) ANISN group cross-sections used with discrete ordinate codes.

It is possible to compare the data of cross-sections for any isotope from selected libraries, and it is possible to extract a particular nuclear reaction cross-section from ACE library files. Context sensitive help is an attractive feature of the program and aids the novice user to extract the required data. Routines were developed to fetch the required data from binary (random access) files.

The interactive program was developed on a Pentium computer under Windows-95,98 and was tested at RSICC on a PENTIUM III 1GHz Micron running Windows 2000. The package is transmitted on a CD which contains a self-extracting compressed file that contains Visual Basic 6 source files, executable files, typical cross section library files and documentation and help files.

References: Informal reports from Safety Research Institute (November 2001). Visual Basic 6.0; Pentium (P00514/PC586/00).

CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users/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 FINCHSY@ornl.gov with "conferences" in the subject line. 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.

Nuclear Criticality Slide Rule Workshop

The Nuclear Criticality Slide Rule Workshop will be held February 26-27, 2002, at the Oak Ridge National Laboratory, Oak Ridge, Tennessee, and is intended for criticality safety and radiation shielding engineers, health physicists, and emergency response personnel. The Slide Rule is available in working hand-held hard copy or as a Windows PC program. The workshop includes hands-on-training with both versions. Attendees must bring a laptop PC (Windows 95/NT or later) with CD-ROM drive.

Registration information: If you register by January 31, 2002, you will receive a $100 discount. Cost of the workshop is $800 registration fee, $125 for the hand-held hard copy of Slide Rule, $450 for Windows PC version of NCS Slide Rule on CD. For more information or to register online, go to www.cped.ornl.gov/sliderule.

Practical MCNP for the HP, Medical Physicist, and RAD Engineer

DATE: May 6-10, 2002
FEE: $1,850 per person with the MCNP™ code package

($1,400 per person without code package)

PLACE: The Canyon School Complex, Los Alamos National Laboratory, New Mexico

Monte Carlo type calculations are ideally suited to solving a variety of problems in radiation protection and dosimetry. 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 MCNP™ to solve a variety of practical problems in radiation shielding and dosimetry. The intent is to "jump start" the student toward using MCNP productively. Extensive interactive practice sessions are conducted on a personal computer. Topics will include overview of the MCNP code and the Monte Carlo method, basic concepts, 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. The course fee includes a complete MCNP code package, distributed directly from the Radiation Safety Information Computational Center (RSICC). Students will also be provided with a comprehensive class manual and a diskette containing all of the practice problems. This course has been granted 32 Continuing Education Credits by the AAHP, 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: *Los Alamos National Laboratory, Group ESH-4, MCNP Class/David Seagraves, Mail Stop G761, Los Alamos, NM 87545*.

Inquiries regarding registration and class space availability should be made to David Seagraves, 505-667-3241, fax: 505-665-6071, e-mail: dseagraves@lanl.gov. Technical questions may also be directed to Dick Olsher, 505-667-3364, e-mail: dick@lanl.gov.

Symposium on Radiation Measurements and Applications

The 10th in a series will be held May 21-23, 2002, at the University of Michigan, Ann Arbor, MI. The program will emphasize research and recent development in ionizing radiation measurements. Proposed session topics are: radiation sources, including secondary target sources; detectors and detection systems; data acquisition and data analysis systems and methods; radiation spectroscopy; particle-induced X-ray emission and radiation-induced fluorescence; analytical standards and elemental analysis; new and unique applications of ionizing radiation; industrial radiography and tomography; nuclear methods in space exploration and planetary science.

First call for papers: deadline for receipt of summaries is January 23, 2002. For more information see the website at: http://rma-symposium.engin.umich.edu/ or contact David K. Wehe at dkw@umich.edu.

MCNP Course Announcement for 2002

Registration: http://www-xdiv.lanl.gov/XCI/PROJECTS/MCNP/registration.html
MCNP home page: http://www-xdiv.lanl.gov/XCI/PROJECTS/MCNP/index.html
LANL contact: jfb@lanl.gov
European contact: sartori@nea.fr

The MCNP code developers will present several classes in 2002 in the United States and two classes in Europe. The dates for these classes are:

Feb 26-March 1	**Introductory class**	**North Carolina State University**
March *(date to be decided)*	**Advanced class**	**Imperial College of London, UK**
April 9-12	**Advanced class**	**Los Alamos, NM**
May 14-17	**Criticality calculations**	**Knoxville/Oak Ridge area**
June 4-7	**Introductory Class**	**Los Alamos, NM**
July 30-August 1	**Variance reduction class**	**Los Alamos, NM**
September *(date to be decided)*	**Introductory class**	**Stuttgart, Germany**

The introductory class is for people who have little or no experience with MCNP. The intermediate to advanced class will be held for people who have used MCNP and want to extend their knowledge and gain depth of understanding.

The classes will be based on MCNP5, that has a tentative release date of April 2002. The code and data package will be available through RSICC at a reduced rate to class participants. The new capabilities of version 5 will be covered.

The other capabilities on MCNP will also be covered, including: Basic geometry and advanced geometry, Source definitions, Tallies, Data, Variance reduction, Statistical analysis, Criticality, Plotting of geometry, tallies, and particle tracks, Neutron/photon/electron physics.

All classes provide interactive computer learning. Time will be available to discuss individual questions and problems with MCNP experts or to pursue in more detail topics mentioned in the talks. Please note that other classes are offered based on MCNP. The classes mentioned here are the only ones that are taught by the people who develop and write MCNP.

MCNPX Workshops for 2002

Lead Teachers: Drs. John Hendricks, Gregg McKinney, Laurie Waters
Organizer: Hamilton Quality Consulting
More Information: http://mcnpxworkshops.com
Contact: bill@solutionsbyhqc.com
MCNPX homepage: http://mcnpx.lanl.gov

February 18-22	**Introductory Workshop**	**Tokyo, Japan**
April 18-23 (Sun. off)*	**Intermediate Workshop**	**Santa Fe, NM**
May 13-17	**Introductory Workshop**	**Los Alamos, NM**
June 24-28	**Intermediate Workshop**	**Lisbon, Portugal**

***updated 12/18/01**

MCNPX is the LANL all-particle, all-energy (eV-TeV) Monte Carlo transport code based on MCNP4C, LAHET, CEM, etc. MCNPX has been in active development since 1995, sponsored by the particle accelerator community. It has now become an accepted tool for a broad range of applications by nuclear engineers, physicists, and scientists. The MCNPX development effort has expanded the use of the Los Alamos tools to applications such as APT, waste transmutation,

accelerator shielding and health physics, particle beam cancer therapy, space shielding and cosmic ray analysis, Single Event Effects in semiconductors, radiography, and more detailed analysis of the effects of light and heavy ions in matter. In addition, the entire functionality of MCNP4C is retained. New variance reduction and data analysis techniques, many adapted from high energy accelerator methodologies have also been added, such as the extensive 'mesh tally' capability which allows up to 3-d plotting of particle tracks, fluence and fluence-derived quantities, energy deposition, next event estimator generation contributions and particle sources.

All workshops include hands-on instruction generally on PC Windows machines. Subject to participant export approval for the MCNPX beta test team, participants will be able to access the Fortran-90 version of MCNPX 2.4, the LA150 (150 MeV) cross-section data for over 40 isotopes for incident neutrons and protons, and 12 for photonuclear interactions, and a notebook of viewgraphs. Followup consultation for class participants will be provided.

Classes are taught directly by experienced MCNPX code developers and instructors. For more information on code versions and their capabilities, go to the MCNPX Workshops web site http://mcnpxworkshops.com.

MACCS Meeting

The Fourth Meeting of the International MACCS Users Group (IMUG) will be held on September 6, 2002, in the Principality of Monaco. The focus of the Fourth IMUG Meeting will be the exchange of technical information relating to the application of MACCS, MACCS2, and COSYMA codes to relevant problems involving atmospheric dispersion of radioactive materials and resulting consequences.

There is no fee to participate in the meeting, however for planning purposes, advance registration is requested. Everyone, including COSYMA users, are invited to present a paper. Please visit the website www.bnl.gov/est/IMUG2002 to find out about IMUG, register for the meeting or request notification of web updates. The website will be updated as additional information becomes available.

CALENDAR

February 2002

***MCNPX Introductory Workshop*, Feb. 18-22, 2002, Tokyo, Japan. Contact: Bill Hamilton (tel 505-662-9097, email registrar@mcnpxworkshops.com, url http://mcnpxworkshops.com for details).**

***Nuclear Criticality Slide Rule Workshop*, Feb. 26-27, 2002, Oak Ridge, TN. Contact: Kay Lichtenwalter (fax 865-576-3513, email scalehelp@ornl.gov, url www.cped.ornl.gov/sliderule).**

March 2002

***Hardened Electronics and Radiation Technology (HEART) Conference*, Mar. 11-15, 2002, Monterey, CA. Contact: Thomas Stringer, chair (tel 719-599-1719, fax 719-599-1991).**

***SCALE Source Terms and Shielding Course*, Mar. 11-15, 2002, Oak Ridge, TN. Contact: Kay Lichtenwalter (fax 865-576-3513, email scalehelp@ornl.gov, url www.cped.ornl.gov/scale/trcourse.html).**

***SCALE KENO-VI Criticality Safety Course*, Mar. 18-22, 2002, Oak Ridge, TN. Contact: Kay Lichtenwalter (fax 865-576-3513, email scalehelp@ornl.gov, url www.cped.ornl.gov/scale/trcourse.html).**

April 2002

***6th International Symposium on Fusion Nuclear Technology - ISFNT-6*, Apr. 7-12, 2002, San Diego, CA. Contact Claudia Hennessy (email**

chennessy@vlt.ucsd.edu; url http://isfnt6.ucsd.edu).

***Thirty-Eighth Annual Meeting of the National Council on Radiation Protection and Measurements*, Apr. 10-12, 2002, Arlington, VA. Contact: William M. Beckner (tel 301-657-2652, fax 301-907-8768, url www.ncrp.com).**

***Back to the Future of Nuclear Technology, 2002 ANS Student Conference*, Apr. 10-13, 2002, University Park, PA. Contact: Frank Buschman (tel 814-865-6351, email fxb129@psu.edu, url www.clubs.psu.edu/ ANS).**

***12th Biennial RPSD Topical Meeting*, Apr. 14-17, 2002, Santa Fe, NM. Hosted by the ANS Trinity Section and cosponsored by the Health Physics Society, L'Organisation de cooperation et de developpement/L'Agence pour l'energie nucleaire (OECD/AEN, and RSICC. Contact: (email rpsd2002@lanl. gov, url www.lanl.gov/ RPSD2002/).**

***International Youth Nuclear Congress 2002*, Apr. 16-20, 2002, Taejon, Korea. Contact: Alexandre Tsiboulia or Han Seong Son (email alexts@ippe.obninsk.ru, hsson@nanum.kaeri.re.kr, url http://www.iync.org).**

***Seventh International Radiopharmaceutical Dosimetry Symposium*, Apr. 17-19, 2002, Nashville, TN. Contact: Michael Stabin (email michael.g.stabin@vanderbilt.edu, url http://www.doseinfo-radar.com/ symphome.html).**

MCNPX Intermediate Workshop*, Apr. 18-23, 2002, Santa Fe/Los Alamos, NM. Contact Bill Hamilton (tel 505-662-9097, email registrar@mcnpxworkshops.com, url http://mcnpxworkshops.com for details). **We will take Sunday off (and if the RPS conference runs over, we'll start the 19th).

***Radiation Transport Calculations Using the EGS Monte Carlo System*, Apr. 29-May 2, 2002, Ottawa, Canada. Contact: Blake Walters, Ionizing Radiation Standards, National Research Council of Canada, Ottawa, Canada, K1A 0R6. (tel 613-993-2715, fax 613-952-9865, e-mail bwalters@irs.phy.nrc.ca, url www.irs.inms.nrc.ca/inms/irs/papers /egsnrc/brochure.html).**

May 2002

***Practical MCNP for the HP, Medical Physicist, and Rad Engineer*, May 6-10, 2002, Los Alamos, NM. Contact: David Seagraves (tel 505-667-3241, fax 505-665-6071, email deseagraves@lanl.gov, url http://drambuie.lanl.gov/~esh4/mcnp.htm; technical questions to Dick Olsher, 505-667-3364, dick@lanl.gov).**

***MCNPX Introductory Workshop*, May 13-17, 2002, Los Alamos, NM. Contact Bill Hamilton (tel 505-662-9097, email registrar@ mcnpxworkshops.com, url http://mcnpxworkshops.com for details).**

***Symposium on Radiation Measurements and Applications*, May 21-23, 2002, Ann Arbor, MI. Contact: General Chair David K. Wehe (tel 734-764-6215, email dkw@umich.edu, url http://rma -symposium.engin.umich.edu/).**

June 2002

***Topical Meeting: Industrial Radiation and Radioisotope Measurement Applications IRRMA-V A Class IV Topical*, June 9-14, 2002, Bologna, Italy, co-sponsored by the American Nuclear Society. Contact: Prof. Jorge Fernandez (Chair) (e-mail: jorge.fernandez@mail.ing.unibo.it).**

***ANS Annual Meeting, The Revival of the Nuclear Power Option*, June 9-13, 2002, Hollywood, FL (url http://www.ans.org/).**

***14th International Conference on High-Power Particle Beams and 5th International Conference on Dense Z-Pinches*, June 23-28, 2002, Albuquerque, NM (email for general inquiries beams02@sandia.gov; url http://www.sandia.gov/BeamsDZP).**

***MCNPX Intermediate Workshop*, June 24-28, 2002, Lisbon, Portugal. Contact Bill**

Hamilton (tel 505-662-9097, email registrar@ mcnpxworkshops.com, url http://mcnpxworkshops.com for details).

July 2002

***Snowmass Fusion Summer Study,* July 8-19, 2002, Snowmass Village, CO (url http://lithos.gat.com/snowmass/).**

September 2002

***Fourth Meeting of the International MACCS Users Group (IMUG)* September 6, 2002, in the Principality of Monaco (url www.bnl.gov/est/IMUG2002).**

***22nd Symposium on Fusion Technology - SOFT*, Sept. 8-13, 2002, Helsinki, Finland. Contact: Symposium Secretary Mrs. Merja Asikainen (tel +358 9 456 6854; fax +358 9 456 7002; email: soft2002@vtt.fi; url http://www.vtt.fi/val/soft2002/).**

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The nuclear systems literature (shielding, safety, materials) cited below has been reviewed and placed in the RSICC Information Storage and Retrieval Information System (SARIS), now searchable on the RSICC web server (http://www-rsicc.ornl.gov/SARIS.html). This early announcement is made as a service to the nuclear sciences community. Copies of the literature are not distributed by RSICC. They may generally be obtained from the author or from a documentation center such as the National Technical Information Service (NTIS), Department of Commerce, Springfield, Virginia 22161. For literature listed as available from INIS contact INIS Clearinghouse, International Atomic Energy Agency, P.O. Box 100, A-1400 Vienna.

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