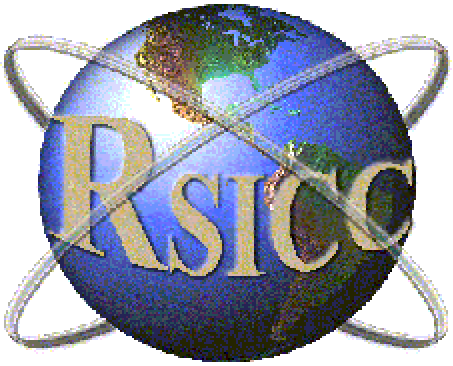
Radiation Safety Information Computational Center



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No. 477 November 2004

"Character is not made in a crisis - it is only exhibited." – Dr. Robert Freeman

OLINDA/EXM Software

Mike Stabin of Vanderbilt University informs RSICC that many people in the radiation dosimetry community have inquired about the status of the OLINDA/EXM software, which was designed as an update to MIRDOSE. The clearance for this code was sought and was received from the FDA on June 15, 2004. The code has now been released by Vanderbilt University. RSICC will *not* be distributing this computer code. Technical information about the code and access information is available at: **http://www.doseinfo-radar.com/OLINDA.html**.

ANS Seeks Scholarship Candidates

The American Nuclear Society is seeking candidates for its one-year undergraduate and graduate scholarships for the academic year beginning September 2005. These scholarships have been endowed by the Society and others to recognize academic excellence and promise in nuclear science and engineering. For detailed information **click here**.

To be eligible, an applicant must be a U. S. citizen or possess a permanent resident visa, be enrolled in a U. S. college or university, and must be sponsored by an ANS local section, professional division, student section, committee, member or organization member. More than one applicant can be sponsored by any of these organizations, however, applicants for the Alan F. Henry/Paul A. Greebler Scholarship must be full-time graduate students of a North American university engaged in Masters or PhD research in the area of nuclear reactor physics or radiation transport. Students of all nationalities are eligible for the Henry/Greebler Scholarship.

Award amounts vary from $2,000 to $3,500. Scholarship funds may be used by the student to defray bona fide education costs including tuition and books. Students may download the application from the ANS website at **http://www.ans.org/honors/scholarships**.

The February 1 deadline for receipt of the completed application with a grade transcript and three confidential reference forms is strictly enforced.

Changes to the Computer Code and Data Collection

CCC-522/VARSKIN 3

OP SYS: Windows
Language: Fortran & Visual Basic
Computers: Pentium
Format: Windows

Colorado State University, Fort Collins, Colorado, contributed a newly frozen version of this code system to calculate the radiation dose (gamma and beta) to skin from radioactive contamination of skin or protective clothing. It is a modification of VARSKIN MOD 2 and was designed to operate in a Windows® environment. VARSKIN 3 uses improved algorithms for calculating skin dose that take advantage of the increased power of modern personal computers that improve the overall accuracy of the calculations. The new code is significantly easier to learn and use than the previous release and includes numerous corrections and enhancements that are noted in the User Manual. Backscatter correction and gamma dose models were upgraded. The default area for skin dose calculations was changed to 10 cm^2 to conform to recent regulatory guidance. The input data file for VARSKIN Mod 2 was modified to reflect current physical data, to include the contribution to dose from internal conversion and Auger electrons, and to reflect a correction for low-energy electrons. In addition, the computer code SADDE (Scaled Absorbed Dose Distribution Evaluator) Mod 2 was incorporated into VARSKIN 3, thus eliminating the need for additional input from the user.

VARSKIN 3 calculates the dose to 10 cm^2 as a default for comparison to the 50 rad limit and also contains the capability of calculating the dose to 1 cm^2 to evaluate an exposure against the eye dose limit. Doses from multiple sources can be computed. Newer data files contain physical data for the average energy, maximum energy, and yield based on NUCDECAY (Oak Ridge National Laboratory, 1995), which uses data published in ICRP 38 (1983). Further information in the library files includes data for gamma dose calculations and contribution from internal conversion and Auger electrons.

VARSKIN 3 was tested at RSICC on a Pentium IV 2.8 GHz running Windows XP with Service Pack 1.0. It was also tested under Windows XP SP2 and Windows 2000 SP 4. Source files are not included, so the code cannot be run on other operating systems. The package is transmitted on a CD. Reference: NUREG/CR Draft (October 2004). Fortran; Pentium (C00522PC58603).

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 **FINCHSY@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. Below is a condensed list of the **conferences** only listed chronologically. More details (if available) are listed alphabetically following the table.

Condensed Table of Conferences

Name of Conference	Date and Location	Web Site	Abstract/Paper Due Date
ANS Annual Winter Meeting and Nuclear Technology Expo	Nov. 14-18, 2004 Washington, D.C.	**http://www.ans.org/meetings/**	
2005 HEART Conference	Mar. 21-25, 2005 Tampa, Florida		passed
AIChE Spring National Meeting	Apr. 10-14, 2005 Atlanta, Georgia	**http://www.aiche.org/conferences/**	Feb. 11, 2005
Monte Carlo 2005 Topical Meeting	Apr. 17-21, 2005 Chattanooga, Tennessee	**http://MonteCarlo2005.org**	**call for papers**
Twelfth International Symposium on Reactor Dosimetry	May 8-13, 2005 Gatlinburg, Tennessee	**announcement / call for papers in pdf** **http://reactordosimetry.com**	passed
2005 International Congress on Advances in Nuclear Power Plants (2005 ICAPP)	May 15-19, 2005 Seoul, Korea	**http://www.icapp2005.org**	passed
International Nuclear Chemistry Society (INCS)	May 22-29, 2005 Kusadasi, Turkey	**http://incs.ege.edu.tr/1st-INCC.html**	Oct. 1, 2004
ANS Annual Summer Meeting	June 5-9, 2005 San Diego, California	**http://www.ans.org/meetings/**	
Seventh Topical Conference on Nuclear Applications of Accelerator Technology "AccApp05"	Aug. 28-Sept. 1, 2005 Venice, Italy	future	Mar. 31, 2005
230th American Chemical Society National Meeting	Aug. 28-Sept. 1, 2005 Washington, D.C.	**www.cofc.edu/~nuclear** (future web site)	April 2005

Name of Conference	Date and Location	Web Site	Abstract/Paper Due Date
International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear Biological Applications (M&C 2005)	Sept. 12-17, 2005 Avignon, France	**http://mcavignon2005.cea.fr**	
2005 NCSD Topical Meeting	Sept. 19-22, 2005 Knoxville, Tennessee	**http://meetingsandconferences.com/ncsd2005/**	Jan. 7, 2005
Eleventh International Topical Meeting on Nuclear Reactor Thermal Hydraulics	Oct. 2-6, 2005 Avignon, France	**http://nureth11.com/**	passed

2004 Conferences / Courses

MARS15 Code System Course

THE MARS15 Code System Course will be taught at the Stanford Linear Accelerator Center, **December 1-4, 2004**, by Dr. Nikolai Mokhov (FNAL and MARS author). Topics will include lectures on the code system: physics, materials, geometries, tracking, tallies, interfaces, visualization, and beam line builder; tutorials on input, output, user routines, histograming and computing efficiency; solving problems in accelerator, detector and shielding applications. For more information, click on **MARS15 Code System Course**, or contact Heinz Vincke (**hvincke@slac.stanford.edu**) or Betty Eaton (**bjeaton@slac.stanford.edu**).

MCNPX Workshops

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

Nov. 15-19, 2004	Introductory	Europe (TBA)

2005

Jan. 24-28, 2005	Introductory	San Diego, CA
Feb. 28-Mar. 1	Intermediate	Europe (TBA)
June 13-17	Introductory	Santa Fe, CA
Aug. 1-5	Introductory (?)	Seoul, Korea

Sept. 19-23	Intermediate	Boston or D.C.
Nov. 7-11	Introductory	Santa Fe, CA

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.

The 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. Follow-up consultation for class participants will be provided.

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

SCALE Training Courses at ORNL (Fall 2004)

http://www.ornl.gov/sci/scale/trcourse.html

Date	Title	Registration Fee	Description
Nov. 1-5, 2004	KENO V.A Criticality Safety	$2100	CSAS/KENO V.a (including KENO3D and GeeWiz
Nov. 8-10, 2004	TSUNAMI Sensitivity/Uncertainty Tools (KENO V.a course prerequisite for new users)	$1500	1-D and 3-D sensitivity/uncertainty analysis using XSDRNPM and KENOV.a
Nov. 11-12, 2004	STARBUCS Burnup Credit (KENO V.a course prerequisite for new users)	$1000	Automated burnup credit analysis using ORIGEN-ARP and KENO (V.a or VI).

A discount of $600 per each additional week will be applied for registration to multiple courses.

2005 Conferences

Monte Carlo 2005 Topical Meeting

Monte Carlo 2005 will be held **April 17-21, 2005,** (Sunday-Thursday). The theme of the conference will be "The Monte Carlo Method: Versatility Unbounded in A Dynamic Computing World."

The conference site is the Chattanooga Marriott and Convention Center in Chattanooga, Tennessee. The conference will be hosted by the American Nuclear Society (ANS) Oak Ridge/Knoxville Section, with ANS Radiation Protection and Shielding Division (RPSD) as the sponsoring division and Mathematics and Computations Division (MCD) as a co-sponsor. Co-sponsors will also include Oak Ridge National Laboratory (ORNL), Radiation Safety Information Computational Center (RSICC) and the Organization for Economic Cooperation and Development (OECD) Nuclear Energy Agency Data Bank (NEADB).

The Monte Carlo method and its applications have been frequently addressed at several major conferences and workshops organized in recent years in the area of nuclear applications. Monte Carlo topics have included radiation shielding, radiation physics, medical physics, and high energy physics. Significant developments have taken place in computational and data issues, resulting in state-of-the-art computer codes and tools. Monte Carlo 2005 is the next in a series devoted to the topic, following Monte Carlo 2000 which was held in Lisbon, Portugal, in October 2000.

Conference topics will include: Methods Advancements (Physics) (proton transport, neutron transport, gamma transport, electron transport, heavy ion transport); Nuclear Data Advancements (proton transport, neutron transport, gamma transport, electron transport, heavy ion transport); Mathematical and Computational Advances (experiments & benchmarks, mathematical advances, computational advances, visualization); Applications (reactor, medical, accelerator, neutron science, dosimetry, shielding, fuel cycle, waste management, space & aviation, fusion, criticality safety, non-nuclear applications).

The website is **http://MonteCarlo2005.org**. Full papers are due January 21, 2005. For information contact Bernadette Kirk (**kirkbl@ornl.gov**, 865-574-6176), General Chair, or Jeff Johnson (**johnsonjo@ornl.gov**, 865-574-5262), Technical Chair.

2005 International Congress on Advances in Nuclear Power Plants (2005 ICAPP)

The 2005 International Congress on Advances in Nuclear Power Plants will be held from **May 15-19, 2005**, in Seoul, Korea. There is no doubt that continuing support and interest will be a crucial element for the success of the first ICAPP held in Asia.

The ICAPP has grown in stature since the first congress was held in 2002 to share ideas and visions for advances in nuclear power plants among operators, researchers and scholars. The 2005 ICAPP will attract the attention of the world's nuclear experts with many outstanding presentations of new developments and approaches in various studies and industrial projects. Please take the opportunity to share the results of your latest studies at the 2005 ICAPP. To ensure a successful congress, the 2005 ICAPP will consist of invited plenary sessions and topical technical sessions, as follows:

1. Water-Cooled Reactor Programs and Issues,
2. High Temperature Gas-Cooled Reactors,
3. Long-Term Reactor Programs and Strategies,
4. Operations, Performance and Reliability Management,
5. Plant Safety Assessment and Regulatory Issues,
6. Thermal Hydraulic Analysis and Testing,
7. Core and Fuel Cycle Concepts and Experiments,

8. Materials and Structural Issues,
9. Nuclear Energy and Sustainability including Hydrogen, Desalination and Other Applications, and
10. Near-Term Deployment.
Visit the website **http://www.icapp2005.org** to find out more about the 2005 ICAPP in Seoul.

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

DATES: **June 6 -10, 2005** (4.5 days)
FEE: $1,450 per person
PLACE: The MESA Complex, Room 130, University of New Mexico-Los Alamos Campus

Monte Carlo calculations are ideally suited to solving a variety of problems in radiation protection and dosimetry. This course is aimed at the health physicist, 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 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 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 HSR-4, MCNP Class, David Seagraves, Mail Stop J573, 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.

Nuclear Applications of Accelerator Technology "AccApp05" - 7th Topical Conference

The forthcoming International Topical Meeting on Nuclear Applications of Accelerator Technology (AccApp'05) is the seventh in a series of international meetings of the Accelerator Applications Division of the American Nuclear Society. It is scheduled for **August 28-September 1, 2005,** on the Island of San Servolo, Venice, Italy. The purpose of AccApp'05 is to provide an international forum for presenting and discussing the use of particle accelerator technology for a variety of applications. It is intended to focus on a wide area of applications including, spallation neutron sources, isotope production, medical therapy, nuclear waste transmutation, energy production, high power accelerators under construction and future projects, material issues in a particle environment, nuclear data and experiments, codes and models for particle transport, system engineering, thermo hydraulics, contraband detection and radiation protection. For more information see: **http://www.nea.fr/listsmh/satif/pdf00004.pdf**.

Eleventh International Topical Meeting on Nuclear Reactor Thermal Hydraulics

NURETH is the foremost international technical meeting on nuclear technology thermal hydraulics. The NURETH-11 meeting will be held in the historic Palace of the Popes in Avignon, France, **October 2-6, 2005**. For more information please go to **http://nureth11.com/**.

Reactor Dosimetry - 12th International Symposium

Approximately every three years the ASTM International Committee E10 on Nuclear Technology and Applications and the European Working Group on Reactor Dosimetry organize a symposium on reactor dosimetry. The 12th International Symposium on Reactor Dosimetry will be held in Gatlinburg, Tennessee, **May 8-13, 2005**. This symposium will be of interest to anyone involved in reactor dosimetry, including researchers, manufacturers and representatives from industry, utilities and regulatory agencies. The symposium theme is dosimetry for the assessment of irradiated reactor materials and reactor experiments, featuring radiation metrology techniques, data bases and standardization. Additional information on paper submittal and specific focus topics can be obtained by visiting the Symposium's web site **http://www.reactordosimetry.com**. In addition to the 100 to 120 oral and poster papers on the topics given on the web site, the symposium will feature six informal round-table workshops and two introductory level tutorials. The workshops will focus on discussions of problems, conflicts, recommendations, news and ideas. The workshop titles for the 12th Symposium will be: Accelerators and Fusion, Adjustments Methods and Uncertainties, Cross Section Files and Uncertainties, LWR Surveillance Dosimetry, Radiation Damage Correlations, and Test and Research Facilities. The two introductory level tutorials will be held in parallel and will address the topics of "Radiation Effects in Reactor Materials" and "Neutron Scattering Applications in Material Science." This symposium is a must-attend meeting for those serious about the field of radiation dosimetry and will offer the opportunity for sharing ideas and discussions with colleagues in the field of radiation dosimetry. This meeting will also be ideal for those new to the field who want to be up to date on dosimetry related issues.

CALENDAR

November 2004

ANS Annual Winter Meeting and Nuclear Technology Expo, Nov. 14-18, 2004, Washington. D.C. For more information: **http://www.ans.org/meetings/**.

MCNPX Introductory Workshop, Nov. 14-19, 2004, Europe (TBA) Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

December 2004

MARS15 Code System Course, Dec. 1-3, 2004, Stanford, CA. Contact: Heinz Vincke (**hvincke@slac.stanford.edu**) or Betty Eaton (**bjeaton@slac.stanford.edu**), or click on **MARS15 course**.

International Workshop on Neutrons for Science (NFS) at SPIRAL-2, Dec. 13-14, 2004, GANIL (Caen), France (url **http://www.ganil.fr/spiral2ws2/**).

January 2005

MCNPX Introductory Workshop, Jan. 24-28, 2005, San Diego, CA. Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

February 2005

MCNPX Intermediate Workshop, Feb. 28-Mar. 1, 2005, Europe (TBA). Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

March 2005

Forty-First Annual Meeting of the National Council on Radiation Protection and Measurements, Mar. 30-31, 2005, Arlington, VA. Additional information: **http://www.ncrp.com**.

April 2005

AIChE Spring National Meeting, Apr. 10-14, 2005, Atlanta, GA. Contact: James J. Laidler (630-252-4479, fax 630-972-4479, email **laidler@cmt.anl.gov** url **http://www.aiche.org/conferences/**).

Monte Carlo 2005 Topical Meeting, Apr. 17-21, 2005, Chattanooga, TN. Contact: Bernadette Kirk (tel 865-574-6176, fax 865-241-4046, email **kirkbl@ornl.gov**, url **http://MonteCarlo2005.org**).

May 2005

12th International Symposium on Reactor Dosimetry, May 8-13, 2005, Gatlinburg, TN. Contact: Dr. James M. Adams (tel 301-975-6205, fax 301-926-1604, url **http://reactordosimetry.com**).

1st International Nuclear Chemistry Society (INCS), May 22-29, 2005, Kusadasi, Turkey. For more information: **http://incs.ege.edu.tr/ 1st-INCC.html**.

June 2005

ANS Annual Summer Meeting, June 5-9, 2005, San Diego, CA. For more information: url **http://www.ans.org/meetings/**.

MCNPX Introductory Workshop, June 13-17, 2005, Santa Fe, CA. Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

August 2005

MCNPX Workshop, Aug. 1-5, 2005, Seoul, Korea. Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

Seventh Topical Conference on Nuclear Applications of Accelerator Technology "AccApp05", Aug. 28-Sept. 1, 2005, Venice, Italy. For more information: **http://www.nea.fr/ listsmh/satif/pdf00004.pdf**.

September 2005

International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear Biological Applications (M&C 2005), Sept. 12-17, 2005, Avignon, France. Contact: Dr. Richard Sanchez (email **avignon2005@drnsac.cea.fr**; url **http://mcavignon2005.cea.fr**).

MCNPX Intermediate Workshop, Sept. 19-23, 2005, Boston, MA or Washington, D.C. Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

2005 NCSD Topical Meeting, Sept. 19-22, 2005, Knoxville, TN. For more information: **http://meetingsandconferences.com/ncsd2005/**.

October 2005

Eleventh International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Oct. 2-6, 2005, Avignon, France. For more information: **http://nureth11.com**, **nureth11@cea.fr**.

November 2005

MCNPX Introductory Workshop, Nov. 7-11, 2005, Santa Fe, CA. Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).