Radiation Safety Information Computational Center

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"If your strength is small, don't carry heavy burdens. If your words are worthless, don't give advice." – Chinese Proverb

RSICC Welcomes Summer Visitors

Dr. Sumer Sahin, Professor of Nuclear/Mechanical Engineering, Head and Chair of the Energy Faculty of Technology, Gazi University, Ankara, Turkey, and **Dr. Haci Mehmet Sahin** of the same university are visiting RSICC for a period of about six weeks, starting August 11, 2004. Dr. Sumer Sahin was a visiting scientist at RSICC at the time when Betty Maskewitz was director. The scientists will be working on projects involving Monte Carlo and discrete ordinates calculations.

Drs. Sumer Sahin (left) and Haci Sahin

Downloading RSICC Software

RSICC offers several packages via the download process. The files are relatively small and take only a few minutes per download depending on line speed. An average 10MB file will take one to five minutes to download on a modern Ethernet connection. A slower modem line could take 20 or more minutes to download the same file. Note: larger codes (SCALE 5, MCNP5, etc.) are not available via downloading due to the significant amount of time that would be required for a download. Packages that must be installed from CD are generally not available via download.

The following codes are currently available via download at RSICC:

AIRDOS-PC	CANDULIB-AECL	CRRIS	DORIAN
ALICE-91	CAP-88	D2O	DRALIST
ANISN-ORNL	CAP88-PC	DANCOFF-MC	DUST-BNL
ANISN-PC	CEPXS/ONELD	DANTSYS 3.0	ECIS-95
ANITA-4	CHENDF6.13	DCHAIN 1.3	EDISTR
ANS643	CITATION-LDI 2	DCTDOS	EDSFI
ARCON96	COBRA-EN	DECDC 1.0	EGS4
BEACON MOD3	COMPBRN3	DIF3D8-VARIANT8	ELAST2

EMPIRE-II
EPIPE
FANG
FASTGRASS
FERD-PC
FESH
FGR-DOSE
FIRAC
FIREDATA
FLUKA-TRANKA
FORECAST V3.0
FUELSDATA
G33-GP
GAMANAL
GAPCON-THERMAL
GASPAR
GENII-S
GGG-GP
GRASS-SST
GRFPAK
GT2R2
HAARM-3
HATCHES-12
HEATING 7
HIMAC
HIPPOS V2
HSI-DRG
ICOM
INFLTB
ISO-PC 2.1
JENDL/D-99
KUX
LAHET 2.8
LAS CRUCES
LHS
LOUHI82
LSMOD-GLSMOD
MACCS2 1.12
MARCH2
MARD 4.16
MARMER
MC**2-2
MEDUSA-IB
MILDOS-AREA
MINET
MINTEQ
MOCUP
MORSE-C
MORSE-GCA
MOSRA-LIGHT
NAP
NCSP-DAT
NJOY94.61
NJOY97.0
NJOY99.0
NMTC/JAERI97
NORMA
NORMA-FP
NRCPAGE
NUCDECAY
OCTAVIA
OMCOST
ORCENT-2
ORIGEN-SANDIA
ORINC
PART61
PAVAN
PELE-1C
PHOTX
PLOTNFIT
PRECO2000
PRESO-II
PSDREC
PWR-AXBUPRO-GKN
PWR-AXBUPRO-SNL
QAD-CGGP-A
QADMOD-GP
QUARK
QUINCE-PC
RACC
RACC-PULSE
RADDECAY
RADTRANS4
RASCAL 2.2
RATAF
REBUS3/VARIANT8
REFCO83
REPRISK PC 1.02
RESRAD 5.82
RSAC-6
SABRINA 3.54
SAFE-D/SAFE-R
SAMCR
SAND II
SAND-II-SNL
SARA 4.16
SCAT-2B
SCINFUL
SCORE-EVET
SEECAL
SEISIM1
SHIELD
SIOB
SKYDATA-SKU
SKYIII-PC
SKYSHINE-SKU
SOLA-LOOP
SQUIRT 2.3
STAPRE-H95
STAPREF
STAR CODES
STAY'SL
STRAGL
SUGGEL
SUSD
SUSD3D
SWIFT2
SYVAC-D/2
TEMAC
TOXRISK
TRANSX 2.15
TRIGLAV
UHS
UMG 3.3
UNGER
UTSG
VARSKIN 2
WIMS-ANL 4.0
ZOTT9

To request a code to be downloaded go to **http://rsicc.ornl.gov/rsiccnew/order.htm** and complete the following steps:

1. Registration
2. Order Form *(see note below)*
   a) Software License
   b) Export Control Form
3. Payment (If applicable, an invoice and payment options will be sent to you.)

Note: On the Order Form, **Step 12. Transfer Option**, select **Download**. ***Verify the code is on the download list by clicking the **"click here"** button. If the code is **not** on the list, it **cannot** be downloaded. Another option must be chosen.***

When steps 1-3 are complete an email will be sent to the user with download instructions. The user will have two weeks to download the file after the email is sent.

Nuclear Criticality Safety - WWW Access Information

As a reminder to the Nuclear Criticality Safety Community, the ICSBEP maintains an Internet Site (**http://icsbep.inel.gov**) where a link is provided to an electronic form that users may complete to request evaluation of specific data (3rd link down from the upper left-hand corner). If any of you are using data that you would like to see the ICSBEP evaluate and include in the "International Handbook of Evaluated Criticality Safety Benchmark Experiments," please complete the electronic form provided. This information will be very helpful in planning future work.

The new DOE Data Center Forum

This past July 14th and 15th the DOE Office of Science and Technical Information (OSTI) sponsored their first DOE Data Center meeting in Oak Ridge, TN. The meeting agenda is located at their new WWW site, **http://www.osti.gov/datameeting**. There were attendees from Brookhaven, Pacific Northwest, and Oak Ridge National Laboratories. Special guest speakers were Walt Warnick of OSTI, Jeffrey Hayes of NASA and Christopher Greer of the National Science Foundation.

This first DOE Data Center Forum focused on cross-cutting issues that both help and hinder the data centers and the goals and problems surrounding data and software stewardship operations at some of the federal agencies. Follow-up meetings will be continuing in the Fall of 2004. Details will be provided as they become available.

Visitors to RSICC

Dr. Sukesh Aghara, Prairie View A&M University (Texas), NASA Center for Applied Radiation Research (CARR), visited on August 2-3, **http://www.pvamu.edu/carr/**.

Dr. Jim Stubbins, Nuclear Engineering Department Head, Univ. of Illinois, Urbana-Champaign, visited on August 5-6, **http://www.ne.uiuc.edu/stubbins.html**.

Dr. Sheldon Landsberger, University of Toronto, visited August 18-19, **http://www.me.utexas.edu/~nuclear/landsberger.htm**.

People in the News

The following information was taken from the August 2004 edition of *Nuclear News*.

Joseph M. Hendrie, ANS Fellow and past President (1984-85), and member since 1956, is the recipient of the 2004 Henry DeWSolf Smyth Nuclear Statesman Award, which is awarded jointly by ANS and the Nuclear Energy Institute. Hendrie was recognized for his outstanding leadership in the development and safe management of nuclear technologies and for his pioneering efforts to develop standard review plans for the licensing of nuclear power plants. A former commissioner and chairman of the U.S. Nuclear Regulatory Commission, Hendrie was one of the inventors of Brookhaven National Laboratory's High Flux Beam Reactor. He retired from BNL in 1996.

Newly elected Fellows of the American Nuclear Society were recognized at the Honors and Awards Luncheon at the 2004 ANS Annual Meeting in June.

David J. Hill, ANS member since 1981 and Associate Laboratory Director for Energy and Engineering Sciences Directorate at the Oak Ridge National Laboratory, was honored for his technical leadership in the areas of international reactor safety, fast reactor analysis and design, and nuclear fuel cycle technologies, for his leadership in the successful completion of a Level 1 PRA (probabilistic risk assessment) for the Experimental Breeder Reactor II (EBR-II), for his technical leadership of the International Nuclear Safety Center, involving several countries of the former Soviet Union, and for his participation in and contributions to the six-laboratory initiative to define a long-term vision for nuclear energy research.

Steven Chu, a professor of physics and applied physics at Stanford University and a co-winner of the 1997 Nobel Prize in physics, has been named director of the Lawrence Berkeley National Laboratory. He succeeds **Charles V. Shank**, who is stepping down after 15 years as director but will remain on the faculty at the Berkeley campus of the University of California, which operates the lab.

Phillip J. Finck, ANS member since 1994 and a deputy associate laboratory director of Argonne National Laboratory's Engineering Research Division, was honored for outstanding leadership in the successful development and experimental validation of neutronics codes and nuclear data libraries for application to fast reactors, fuel cycle, thermal reactors, MOX fuels, and criticality safety.

Edward H. Klevans, ANS member since 1968 and a professor emeritus at Pennsylvania State University, was honored for his academic leadership in nuclear engineering education as reflected in the high quality undergraduate and graduate programs he helped develop and lead at Penn State, for his success in promoting research, graduate distance education, and public education program, and for his efforts to seek federal research funding for nuclear engineering programs.

J. Kenneth Shultis, ANS member since 1969 and a professor in the Mechanical and Nuclear Engineering Department at Kansas State University, was honored for his outstanding teaching and research contributions to radiation shielding and protection. He is the coauthor of four widely used nuclear engineering texts and the author of more than 100 papers and computer codes on many radiation-related subjects, particularly on various simplified techniques for neutron and gamma-ray skyshine and other radiation analysis.

Other ANS honors and awards were presented in June at the ANS Annual Meeting.

The Cisler Medal was presented to **Peter Murray**, ANS Fellow and member since 1966, for his pioneering work on the development of oxide fuels for thermal and fast reactors, for his contributions to the successful operation of the Dounreay Fast Reactor and the Fast Flux Test Facility and to the design of the Clinch River Breeder Reactor, and for fostering an international development of fast breeder reactor systems through his technical and managerial leadership. Murray retired in 2002 as a senior consultant for Westinghouse Electric Company.

The Walter H. Zinn Award was presented to **Harold B. Ray**, ANS past President (2002-03) and member since 1987, for his outstanding contributions to the advancement of nuclear power. Ray is executive vice president of Southern California Edison.

The "Tommy" (Theos J.) Thompson Award was presented to **Mario H. Fontana**, ANS Fellow and member since 1968, in recognition of his many contributions toward improving the safety of nuclear

power plants through his outstanding technical work and his wisdom in guiding important research programs. Fontana is retired from Oak Ridge National Laboratory.

The Arthur Holly Compton Award in Education was presented to **Paul J. Turinsky**, ANS Fellow and member since 1971, for his outstanding contributions to nuclear engineering education, for excellence in incorporating state-of-the-art technology in his teaching, and for his exceptional ability to foster research in education. Turinsky is a professor at North Carolina State University.

Alan E. Waltar was presented the Public Communication Award. Waltar is an ANS Fellow and past President (1994-95) and member since 1967. He was awarded for his dedication to public communication about the peaceful uses of nuclear science, for his achievements in increasing public understanding, and for his inspiration of others. Waltar is director of Nuclear Energy at the Pacific Northwest National Laboratory.

In the Small Section category for the Local Section Meritorious Awards, the **ANS Virginia Section** was recognized for the Best Membership and Best Section Management, and the **ANS Savannah River Section** was recognized for Best Meetings and Programs and Best Public Information and Education.

In the Large Section category, the **Idaho Section** was named the Best Overall Section.

In the International Section category, the **French Section** was recognized for Best Meetings and Programs and Best Section Management.

The Samuel Glasstone Award, which recognized the ANS student sections with the most notable achievements in public services and the advancement of nuclear engineering during the year, was presented to the **University of Wisconsin-Madison** and the **University of Florida** student sections. The **Rensselaer Polytechnic Institute** and the **University of Missouri-Rolla** student sections received honorable mentions.

A Presidential Citation was awarded to **Herbert M. Fontecilla**, member since 1971, for his work on the ANS Public Policy Committee. He led efforts to provide relevant and current statements regarding policy issues related to nuclear technology and provided counsel to the officers and Board of Directors while representing the Society in public forums and promoting the exchange of nuclear technology information. Fontecilla recently retired as regulator affairs advisor for Dominion Energy.

A Presidential Citation was awarded to **Brian K. Hajek**, ANS fellow and member since 1968, in recognition of his service to the Society in many capacities, particularly for his recruiting new members for the Society and for revitalizing elements of nuclear engineering education and training. Hajek is associate chair of the Nuclear Engineering Department at Ohio State University.

A Presidential Citation was awarded to **Theodore Rockwell**, ANS Fellow and member since 1992, in recognition of his efforts to establish "realism" regarding nuclear science and technology and to challenge administrative judgments that portray unrealistic harm to public health and safety. Rockwell is vice president of Radiation, Science and Health, Inc.

The President's Plaque of Appreciation was presented to **Larry R. Foulke**, 2003-04 ANS President and member since 1967, for his commitment to the American Nuclear Society and his

contributions to making ANS a more vibrant and effective organization. Foulke is a consultant in reactor physics at Bechtel Bettis, Inc.

Obituaries

The following information was taken from the August 2004 edition of *Nuclear News*.

Harvey Brooks, 88, ANS Fellow and charter member and physicist. He received a bachelor's degree in mathematics from Yale University and his Ph.D. in physics from Harvard University. He helped design an acoustic homing torpedo known as "Fido," which the military used during the last year of fighting. He spent four years with General Electric as one of the pioneers developing the first generation of nuclear power reactors. He was the president of the American Academy of Arts and Sciences from 1971 to 1976. Brooks died May 28 at his home in Cambridge, Massachusetts.

Robert G. Pahl, 51, ANS member since 1994. After receiving a Ph.D in materials sciences from Northwestern University in 1983, he joined Argonne National Laboratory-West. Pahl became an internationally recognized expert in the development of nuclear reactor fuel and was an expert in the safe storage and handling of spent nuclear fuel. Pahl died on May 28 at his home in Idaho Falls, Idaho.

William E Spicer, 74, died on June 6 while vacationing in London. He was best known for the development of photoemission spectroscopy. He pioneered image-intensification technology which is used in medical imaging devices and military night-vision devices. Spicer worked for RCA Research Laboratories in Princeton, NJ from 1955-62, and joined the faculty of Stanford University in 1963 where he taught electrical engineering, applied physics, and materials science for more than 40 years. He was a cofounder of the Stanford Synchrotron Radiation Laboratory.

Changes to the Computer Code and Data Collection

CCC-704/SLIDERULE 1.0

OP SYS: Windows
Language: Visual C++
Computers: PC
Format: Self-Extracting Windows

The SlideRule developers at Oak Ridge National Laboratory, requested that RSICC circulate this notice regarding dose terminology and the "Solve" capability of the electronic version of the "Nuclear Criticality Slide Rule."

All reported radiation absorbed doses (rads) are "tissue-dose" estimates, not "free-air-dose" estimates.

The "Solve" capability for each of the five types of incidents can provide erroneous results for the determination of specific (i.e., Neutron, Gamma, Neutron Skyshine, Gamma Skyshine, Total Skyshine), "Estimated Prompt Doses Based on Total Fission Yield and Distance from Incident" (i.e., the lower left figure). The "Total Radiation" and Total Skyshine" are calculated correctly. When using the "Solve" feature for the lower left figure to determine the prompt dose of a specific radiation source (i.e., Neutron, Gamma, Neutron Skyshine, Gamma and Skyshine) one must approach the solution in a reverse mode. That is, iteratively solve for a known parameter (e.g., "Total Fissions" or "Distance") by changing a specific dose value until the desired "Total Fissions" and "Distance" is returned by the "Solver."

No changes have been made to the RSICC package since its release in January 2002. A functional hard copy of the Slide Rule is NOT included in the RSICC package but may be ordered from the following website: **http://www.ornl.gov/sci/sliderule/**. References: NUREG/CR-6504, Vol. 1

(ORNL/TM-13322/V1) (April 1997) and NUREG/CR-6504, Vol. 2 (ORNL/TM-13322/V2) (April 1998). Visual C++; PC (Pentium or later), Windows 95/NT or later (C00704PC58600).

CCC-722/NAAPRO

OP SYS: Windows
Language: C++
Computers: PC
Format: WinZip file

The Institute for Nuclear Research, National Academy of Sciences of Ukraine, Kyiv, Ukraine, contributed the Neutron Activation Analysis PRognosis and Optimization Code System. NAAPRO predicts the results and main characteristics (detection limits, determination limits, measurement limits and relative precision of the analysis) of neutron activation analysis (instrumental and radiochemical). Gamma-ray dose rates for different points of time after sample irradiation and input count rate of the spectrometry system are also predicted. The code uses standard Windows user interface and extensive graphical tools for the visualization of the spectrometer characteristics (efficiency, response and background) and simulated spectrum. This release is designated NAAPRO, Version 01.beta.

NAAPRO simulates gamma-ray spectrum of activation products for the specified analysis conditions. These are analysis time mode, analyzed sample mass and elemental composition, characteristics of irradiating neutron flux and irradiation conditions, gamma-spectrometry measurement geometry and background conditions, as well as detector and spectrometry system parameters. During calculation of gamma-ray yields of activation products the burnup and buildup of both radioactive and stable isotopes are taken into account.

No source files are included in the package. The included NAAPRO executable was built with Borland C++ Builder 5 compiler and runs under Windows 9x, 2000, or XP on personal computers. NAAPRO was tested at RSICC on a Pentium IV 2.8 GHz running Windows XP with Service Pack 1.0. NAAPRO is transmitted on CD-ROM in a WinZip file. References: Informal papers (May and June, 2004). C++; Windows 9x, 2000, XPC on PC (C722PC58600).

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 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
1st International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry	Sept. 4-8, 2004 Helsinki, Finland	**http://www.eanm.org/eanm.php?kopf=head/hd_calendar.html&worte=calendar/calendar.php**	
International Conference Nuclear Energy for New Europe 2004	Sept. 6-9, 2004 Portoroz, Slovenia	**http://www.drustvo-js.si/port2004/**	passed
12th International Conference on the Physics of Highly Charged Ions	Sept. 6-10, 2004 Vilnius, Lithuania	**http://www.itpa.lt/hci2004/**	passed
16th American Nuclear Society Topical Meeting on the Technology of Fusion Energy	Sept. 14-16, 2004 Madison, Wisconsin	**http://fti.neep.wisc.edu/tofe**	passed
International Conference on Nuclear Data for Science and Technology "ND2004"	Sept. 26-Oct. 1, 2004 Santa Fe, New Mexico	**http://t16web.lanl.gov/nd2004/**	passed
5th International Conference of Yugoslav Nuclear Society (YUNS)	Sept. 27-30, 2004 Belgrade, Serbia & Montenegro	**http://www.vin.bg.ac.yu/YUNS/Yunsc2004.html**	
Americas Nuclear Energy Symposium 2004	Oct. 3-6, 2004 Miami Beach, FL	**http://anes.fiu.edu/2004/**	NA
11th International Congress on Neutron Capture Therapy (ISNCT-11)	Oct. 11-15, 2004 Boston, Massachusetts	**http://meetingsandconferences.com/ISNCT-11/**	
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		Sept. 17, 2004
Monte Carlo 2005 Topical Meeting	Apr. 17-21, 2005 Chattanooga, Tennessee	**http://MonteCarlo2005.org**	**call for papers**

Name of Conference	Date and Location	Web Site	Abstract/Paper Due Date
Twelfth International Symposium on Reactor Dosimetry	May 8-13, 2005 Gatlinburg, Tennessee	**announcement / call for papers in pdf** **http://reactordosimetry.com**	Aug. 1
2005 International Congress on Advances in Nuclear Power Plants (2005 ICAPP)	May 15-19, 2005 Seoul, Korea	**http://www.icapp2005.org**	Sept. 30, 2004
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
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

Advanced Training Course/Workshop on Electron-Photon Transport Modeling with PENELOPE-2003 Physics, Code Structure and Operation

The Advanced Training Course/Workshop on Electron-Photon Transport Modeling with PENELOPE-2003 Physics, Code Structure and Operation will be held **October 18-21, 2004** in Athens, Greece.

This course is addressed to researchers in Radiation Physics and Applications. The main objective is to provide the participants with a detailed description of PENELOPE and an ampler perspective on Monte Carlo methods for simulation of electron/photon transport. The emphasis will be on the reliability of the interaction models and on the accuracy of the numerical methods and approximations implemented in the codes. A number of practical cases will be discussed, including benchmark comparisons with experiments. The course will include practical sessions on the efficient use of the example main programs for planar and cylindrical geometries and on the design of the main program for specific applications.

For more information contact Marios Anagnostakis (tel +30-210-7722912, fax +30-210-7722914, email **managno@nuclear.ntua.gr**, url **http://www.nea.fr/lists/penelope.html**, registration **http://www.nea.fr/html/dbprog/penelope2004-1reg.html**).

Americas Nuclear Energy Symposium 2004

The United States Department of Energy and the American Nuclear Society are pleased to announce the next Americas Nuclear Energy Symposium (ANES 2004), which will take place Sunday through Wednesday, **October 3-6, 2004,** at the Deauville Beach Resort in Miami Beach, Florida.

ANES 2004 will feature the theme "Building Bridges to Greater Cooperation." The symposium will provide you with the latest information about the use and development of nuclear energy technology throughout the Americas. The format will include open panel discussions, case studies, technical breakout sessions, and an exhibit of international organizations, not to mention great opportunities to network.

ANES 2004 will include sessions on nuclear reactors; technology development and deployment; production, disposal and usage of isotopes; fuel cycle and waste management; new applications; finance; and environmental, infrastructure and communications issues.

Another successful event is anticipated with the largest number of participants yet attending from across Canada, the Caribbean, Latin America and the United States. Please visit the website at **http://anes.fiu.edu** for frequent updates.

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**

Sept. 20-24	Intermediate	Las Vegas, NV
Nov. 15-19	Introductory	Europe (TBA)

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.

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**.

Nuclear Data for Science and Technology "ND2004" - International Conference

The International Conference on Nuclear Data for Science and Technology will be held **September 26-October 1, 2004**, in Santa Fe, New Mexico. This is an OECD-Nuclear Energy Agency Conference, which is held approximately every 3 years. Recent conferences in this series were held in Antwerp (1982), Santa Fe (1985), Mito (1988), Jüelich (1991), Gatlinburg (1994), Trieste (1997) and Tsukuba (2001). This International Conference focuses on nuclear data, their production, dissemination, testing and application. The data are produced through both experimental and theoretical models; they are compiled and evaluated to form data libraries for use in applications; and they are tested through benchmark experiments and a very wide range of applications. This Conference includes all of these activities with the goal of improving nuclear data for applications including fission and fusion energy, accelerator driven systems, accelerator technology, spallation neutron sources, nuclear medicine, environment, space, non-proliferation, nuclear safety, astrophysics and cosmology, and basic research. Please see the web site for more information: **http://t16web.lanl.gov/nd2004/**.

SCALE Training Courses at ORNL (Fall 2004)

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

Date	Title	Registration Fee*	Description
Oct. 25-29, 2004	SCALE Source Terms and Shielding Course	$1800	SCALE shielding and depletion/decay sequences (including ORIGEN-ARP)
Nov. 1-5, 2004	KENO V.A Criticality Safety	$1800	CSAS/KENO V.a (including KENO3D and GeeWiz
Nov. 8-10, 2004	TSUNAMI Sensitivity/Uncertainty Tools (KENO V.a course prerequisite for new users)	$1200	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 late fee of $300 will be applied after September 24, 2004.
A discount of $600 per each additional week will be applied for registration to multiple courses.

Yugoslav Nuclear Society (YUNS) - 2004 - 5th International Conference

The Conference will be held **September 27-30, 2004**, at the Chamber of Commerce of the Republic of Serbia, Belgrade, Serbia & Montenegro. For more information visit **http://www.vin.bg.ac.yu/YUNS/Yunsc2004.html**.

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 first ICAPP held in Asia, 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 2005 ICAPP.

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.

Please visit the website **http://www.icapp2005.org** to find out more about the 2005 ICAPP Seoul.

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,** at 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, among others, 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 be the perfect 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

September 2004

1st International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry, Sept. 4-8, 2004, Helsinki, Finland. Contact: Michael Lassmann or Val Lewington, (emails **lassmann@nuklearmedizin.uni-wuerzburg.de**; **vjlewington@hotmail.com**).

12 International Conference on the Physics of Highly Charged Ions, Sept. 6-10, 2004, Vilnius, Lithuania. For more information: **http://www.itpa.lt/hci2004/**.

International Conference Nuclear Energy for New Europe 2004, Sept. 6-9, 2004, Portoroz, Slovenia. For more information: **http://www.drustvo-js.si/port2004**/.

16th American Nuclear Society Topical Meeting on the Technology of Fusion Energy, Sept. 14-16, 2004, Madison, WI. (url **http://fti.neep.wisc.edu/tofe**).

RESRAD-BIOTA (1.0) Workshop, Sept. 15-16, 2004, Argonne, IL. Contact: Charley Yu (tel 630-252-5589, fax 630-252-4624, email **cyu@anl.gov**, url **http://web.ead.anl.gov/resrad/training/**).

MCNPX Intermediate Workshop, Sept. 20-24, 2004, Las Vegas, NV. Contact: Bill Hamilton (tel 505-455-0312, email **bill@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

International Conference on Nuclear Data for Science and Technology "ND2004", Sept. 26-Oct. 1, 2004, Santa Fe, NM. (Contact: **http://t16web.lanl.gov/nd2004/**).

5th International Conference of Yugoslav Nuclear Society (YUNS) - 2004, Sept. 27-30, 2004, Belgrade, Serbia & Montenegro. Contact: Dr. Milan Pesic, (tel 381-11-245-82-22/ext. 681, email **mpesic@vin.bg.ac.yu**, url **http://www.vin.bg.ac.yu/YUNS/index.htm**).

October 2004

Americas Nuclear Energy Symposium 2004, Oct. 3-6, 2004 Miami Beach, Florida. For more information: **http://anes.fiu.edu/2004/**.

11th World Congress on Neutron Capture Therapy (ISNCT-11), Oct. 11-15, 2004, Boston, MA. Contact: Robert G. Zamenhof (tel 617-636-1681, fax 617-636-5867, email **rzamenhof@tufts-nemc.org**, url **http://meetingsandconferences.com/ISNCT-11/**)

Advanced Training Course / Workshop on Electron-Photon Transport Modeling with PENELOPE-2003, Physics, Code Structure and Operation, Oct. 18-21, 2004, Athens, Greece. Contact: Marios Anagnostakis (tel +30-210-7722912, fax +30-210-7722914, email **managno@nuclear.ntua.gr**, url **http://www.nea.fr/lists/penelope.html**).

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).

April 2005

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://meetingsandconferences.com /MonteCarlo2005**).

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/**.

August 2005

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**.

230th American Chemical Society National Meeting, Aug. 28-Sept. 1, 2005, Washington, D.C.

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**).

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**.

ACCESSION OF NUCLEAR SYSTEMS LITERATURE

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/rsiccnew/AT-SARISquery.htm)**. We now include medical physics in addition to material science, radiation dosimetry, radiation safety, reactor dynamics, reactor safeguards, risk assessment, waste management, fuel cycle, fusion and plasmas, high energy particle transport, and shielding. 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.

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