Radiation Safety Information Computational Center

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Managed by
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No. 486 August 2005

*If **A** is success in life, then **A** equals **x** plus **y** plus **z**. Work is **x**; **y** is play; and **z** is keeping your mouth shut. — Albert Einstein*

News from ANS

H. Lee Dodds and **A. W. Wendorf** have been elected to the Nuclear Energy Institute board of directors. Members typically serve three-year terms on the board. Dodds, an ANS Fellow and member since 1971, is head of the Nuclear Engineering Department and the IBM professor of Engineering at the University of Tennessee-Knoxville. Wendorf, a member since 2005, is chairman, president, and CEO of Sargent & Lundy.

Richard T. Lahey, Jr. was awarded the Alexander von Humboldt Senior Scientist Fellowship, an honor given to senior researchers from around the world. Lahey will spend the fellowship working on an advanced concept for a nuclear reactor with German scientists in Karlsruhe at the FZK, the German National Nuclear Energy Laboratory. Also, to commemorate his 65th birthday *Nuclear Science and Engineering* published a Festschrift edition of the journal which includes keynote lectures delivered in a September 2004 symposium in Pisa, Italy, and selected papers from the International Symposium on Two-Phase Flow Modeling and Experimentation, also held in September in Pisa. Lahey is the Edward E. Hood Professor of Engineering at Rensselaer Polytechnic Institute.

ANS Fellows

The grade of Fellow is the highest grade conferred on ANS members who have made outstanding contributions to the advancement of nuclear science and technology. The following new Fellows were recognized at the 2005 Annual Meeting in San Diego.

Richard E. Faw "For his influence on the nuclear engineering profession through his textbooks and research publications, especially in radiation protection and shielding. He inspired the careers of graduates by his example in the class room and the laboratory." Faw has been an ANS member since 1963 and is professor emeritus of nuclear engineering at Kansas State.

Joy L. Rempe "For substantially advancing the science of nuclear technology through her dedicated research efforts and significant publications in the field of nuclear reactor severe accidents. Her work has provided key new insights and tools for understanding severe-accident vessel response, late-phase melt progression and heat transfer, and in-vessel retention." Ms. Rempe has been a member since 1986 and is an engineering fellow at Idaho National Laboratory.

John M. Ryskamp "For outstanding leadership and innovation in nuclear reactor design, the Generation IV Technology Roadmap development, test reactor experiment design, and reactor physics analysis." He has been a member since 1976 and is a consulting engineer at Idaho National Laboratory.

Ruth F. Weiner "For outstanding work in risk analysis and dissemination of information about the safety of transporting radioactive materials. Her leadership as a teacher, textbook author, and public speaker is an inspiration to the profession." Ms. Weiner is on the technical staff of Sandia National Laboratory and has been a member of ANS since 1989.

Honors and Awards

Several Presidential Citations were awarded at the Annual Meeting:

- Andrew C. Klein for "outstanding leadership in the governance of the Society, as well as his guidance on ANS educational and scholarship activities." Klein is head of the Department of Nuclear Engineering and Radiation Health at Oregon State.
- James F. Mallay for "outstanding contributions to the nuclear industry and to the advancement of nuclear technology, as well as his pioneering efforts and leadership on the ANS Standards Board." He is retired from Framatome.

Everett E. Bloom, director of the Metals and Ceramics Division of ORNL, received the Mishima Award for "development of advanced radiation-resistant structural materials for fast-breeder reactor and fusion energy systems."

Obituary

James H. Renken, a member of ANS since 1969, died May 26 at the age of 69. A nuclear physicist, he held a master's degree and a doctorate in physics from Ohio State University and the California Institute of Technology, respectively. Renken began his career at Sandia National Laboratory in 1964. He became supervisor of the Theoretical Division in 1967. He was promoted to manager of the Radiation Effects Department in 1983. He served on the U.S. Dept. of Energy (DOE) Inertial Confinement Fusion Classification Review Team until its work was completed in 1991. In 1994 he became assistant to the director of the Applied Physics, Engineering and Testing Center and in 1996 served a one-year appointment as a laboratory science advisor in the DOE Office of Research and Testing. He retired from Sandia in 1997. His support of the ANS included service as treasurer, secretary, and member of the executive committee of the Radiation Protection and Shielding Division.

CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users and contributors advised of conferences, courses, and symposia in the field of radiation protection, transport, and shielding through this section of the newsletter. Should you be involved in the planning/organization of such events, feel free to send your announcements and calls for papers via email to riceaf@ornl.gov with "conferences" in the subject line by the 20th of each month. Please include the announcement in its native format as an attachment to the message. If the meeting is on a website, please include the url.

Every attempt is made to ensure that the links provided in the Conference and Calendar sections of this newsletter are correct and live. However, the very nature of the web creates the possibility that the links may become unavailable. In that case, please call or mail the contact provided. Below is a chronological list of the conferences. More details (if available) are provided following the table.

Fall 2005 SCALE Training Courses at ORNL

Date	Title	Registration Fee*	Description
October 17–21, 2005	**SCALE Source Terms and Shielding Course**	$1800	SCALE shielding and depletion/decay sequences (including ORIGEN-ARP)
October 24–28, 2005	**KENO V.a Criticality Safety Course**	$1800	CSAS/KENO V.a (including KENO3D and GeeWiz
October 31–November 3, 2005	**TSUNAMI Sensitivity/Uncertainty Tools** (Experienced KENO users only)	$1500	1-D and 3-D sensitivity/uncertainty analysis using XSDRNPM and KENOV.a

*A late fee of $300 will be applied after September 17, 2005. A discount of $600 per each additional week will be applied for registration to multiple courses. Course descriptions can be found at http://www.ornl.gov/sci/scale/training.htm.

SCALE Source Terms and Shielding Course

The SCALE Source Terms and Shielding Course covers SAS2 and ORIGEN-ARP (depletion/source-term generation), SAS1/XSDRNPM (1-D neutron/gamma shielding), SAS4/MORSE-SGC (3-D Monte Carlo neutron/gamma shielding), and QADS/QAD-CGGP (3-D point kernel gamma shielding). The course will feature the use of the SCALE Windows GUIs: OrigenArp for Windows, ORIGEN-S plotting utility PlotOPUS, and the ESPN shielding input processor for SAS4.

KENO V.a Criticality Safety Course

The SCALE KENO V.a Criticality Course focuses on KENO V.a and the associated criticality analysis sequences in CSAS. KENO V.a is a widely used 3-D multigroup Monte Carlo criticality safety code that has been in use for 20 years. It is a fast, easy-to-use code that allows users to build complex geometry models using basic geometrical bodies of cuboids, spheres, cylinders, hemispheres, and hemicylinders. Two-dimensional color plots of the geometry model can be generated in KENO V.a or the model may be viewed using the KENO3D 3-D visualization tool.

TSUNAMI Sensitivity/Uncertainty for Criticality Safety Course

Sensitivity coefficients produced by the TSUNAMI sequences predict the relative changes in a system's calculated k-eff value due to changes in the neutron cross-section data. TSUNAMI produces sensitivity data on a groupwise basis for each region defined in the system model. First-order perturbation theory is used to compute sensitivity coefficients from both cross-section and flux data. TSUNAMI folds the sensitivity data with cross-section covariance data to calculate the uncertainty in the calculated k-eff value due to tabulated uncertainties in the cross-section data. The applicability of benchmark experiments to the

criticality validation of a given application can be assessed using S/U-based integral indices that can quantify system similarity. Attendees must have attended a KENO course or be experienced KENO users.

Introduction to MCNP

This introductory class will be held September 26–30, 2005, at Los Alamos National Laboratory for people who have never used MCNP or have very limited experience with the code and will include interactive computer sessions. Time will be available to discuss individual questions and problems with MCNP experts or to pursue in more detail topics mentioned in the talks. Topics to be covered include:

- New features in MCNP5
- 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

The class will use the newly released MCNP5. You are expected to have little or no experience with MCNP. A manual will be provided for use in the classroom. Address all correspondence regarding this class to Cheryl Royer, croyer@lanl.gov, phone: 505-665-2154. Detailed information and registration is available at http://laws.lanl.gov/x5/MCNP/aug05var.html.

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

2005 Schedule		
Sept. 5–9	Advanced	Bologna, Italy
Oct. 31–Nov. 4	Intermediate	Santa Fe, NM
2006 Schedule		
January 9–13	Introductory	Las Vegas, NV
March 27–31	Intermediate	Capetown, South Africa
June 12–16	Introductory	Santa Fe, NM

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 and is 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.

International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear and Biological Applications

The International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear and Biological Applications will be held at the 'Palais des Papes,' Avignon, France, **September 12–15, 2005.**

The meeting offers an environment for interdisciplinary exchange among researchers in the nuclear field and comprises 19 general technical sessions and 13 invited technical sessions. Details on the sessions and on the organization of the meeting are given at the web site: http://mcavignon2005.cea.fr/.

Three workshops have been organized on Sunday, September 11, 2005, in conjunction with the M&C-2005 Conference, involving three major radiation transport codes:

1. Advances in Monte Carlo Criticality Calculations, Sunday, 9–12 PM

2. TRIPOLI-IV (Monte Carlo), Sunday, 2–5 PM

3. The spectral code APOLLO2: from lattice to 2D core calculations, Sunday, 2–5 PM

Each workshop lasts three hours with a 15 minutes coffee break.

Registration to the workshops is free but limited in the number who can participate. You may register no later than August 31 for one or more workshops when doing your registration for the meeting or for just attending the workshops. Priority will be given to M&C-2005 participants if registration exceeds the workshop capacity. A CDROM will be given to workshop participants.

NCSD 2005 Topical Meeting

The American Nuclear Society Nuclear Criticality Safety Division (NCSD) 2005 Topical Meeting will be held in Knoxville, Tennessee, September 18–22, 2005. The meeting theme, "Integrating Nuclear Criticality Safety into the Resurgence of Nuclear Power," will focus on major accomplishments in education, applications, methods development, and new initiatives. The technical program will cover topics that fall under the following main categories: Applications, Validation Studies/ Software Development, Education/Training/Qualification, and Emerging Initiatives. The opening plenary session includes discussions by speakers knowledgeable about "TVA Projections for Future Nuclear Power Generation," "NASA Nuclear Program Overview," and "International Initiatives Specific to NCS." The website, http://meetingsandconferences.com/ncsd2005/, is the source for the latest information regarding the program and area information.

11th International Topical Meeting on Nuclear Reactor Thermal Hydraulics

NURETH is the foremost international technical meeting on nuclear thermal hydraulics. The French Section of the American Nuclear Society is very proud to organize and announce that the Eleventh NURETH Topical Meeting will be held in Avignon, France, on **October 2–6, 2005**, in the historic Palace of the Popes in Avignon, France.

The main topics covered by the NURETH 11 meeting will be devoted to the thermal-hydraulics of existing and future nuclear power plants as foreseen by the Generation IV worldwide initiative. Normal operation and accidental situations are relevant topics of the conference. Topics encompass modeling, experiments, instrumentation and numerical simulations related to flow and heat transfer in nuclear reactors with a special emphasis on the advances of multiphase CFD methods.

For more information please go to http://nureth11.com/.

Radiation Process Simulation and Modeling User Group Annual Meeting

The Radiation Process Simulation and Modeling User Group (RPSMUG) will be meeting November 17–18, 2005, in Arlington, Virginia, at the Hilton Garden Inn, Arlington Courthouse Plaza. The two-day meeting has two distinct themes: Day 1 is intended for everyone, particularly individuals interested in process simulation and modeling and how it can be applied to radiation processing. Day 2 will consist of more detailed technical presentations. Both days will consist of round-table discussions and informational sessions related to the use of mathematical models and simulation in radiation processing (gamma, electron beam, and X-ray). If you have a topic that you would like discussed, please submit it to questions@rpsumug.org. Watch for updates and additional information at www.rpsmug.org.

Submitted by Michael C. Saylor, Special Process Services, L.C., 703-207-0159 or mcs@his.com.

ANS RP&S Division Biennial Topical Meeting

The Radiation Protection and Shielding Division of the American Nuclear Society Biennial Topical Meeting will be held April 3–6, 2006, at the Pecos River Village in Carlsbad, New Mexico. The conference will open with a keynote address by Dr. Glenn Knoll. Other outstanding plenary speakers will include Dr. Kenneth Shultis, Dr. Cassiano de Oliveira and other special speakers.

Workshops will be offered on April 2 and 6, both morning and afternoon. These continuing education classes with the time and location are listed in the following table.

April 2, 2006 — AM	Instructor	Location
Whole Body Counting	David Schoep	CEMRC*
Radioactive Dispersive Devices	James Conca	Pecos River Village
Statistical Methods Including Hypothesis Testing	Robert Hayes	Pecos River Village
Statistical Methods for Probabilistic Risk Assessment	Tom Kirchner	Pecos River Village

April 2, 2006 — PM		
Radiochemistry	James Conca Mansour Akbarzadeh	CEMRC
Non-Destructive Assay	Deirdre Wampler	Pecos River Village
WIPP Repository Performance Assessment	David Kessel	Pecos River Village
April 6, 2006 — AM		
Moritz Workshop	Kenneth Van Riper	Pecos River Village
Monte Carlo Transport Computer code MCNPX Workshop — Beginners	John Hendricks	Pecos River Village
April 6, 2006 — PM		
Monte Carlo Transport Computer code MCNPX Workshop — Advanced	John Hendricks	Pecos River Village
MCNP Workshop	Jeremy Sweezy	Pecos River Village
*Carlsbad Environmental Monitoring and Research Center		

There will be no charge to those registered for the conference for any of these workshops, although pre-registration is requested. Attendance at this conference will provide continuing education credits for various technical certifications depending on the degree of participation by the attendee.

Tours will be offered of the Waste Isolation Pilot Plant (WIPP), a licensed and operating deep geological repository for transuranic waste. The actual number of visitors WIPP can accommodate will depend on operational conditions and the work schedule of the facility. The WIPP site is a federal facility and advance notice will be required for a site visit so early registration is strongly encouraged.

The Trinity Site is also available to the general public independent of the conference on Saturday, April 1, 2006. The Trinity Site is the location of the world first detonation of a nuclear weapon.

The call for papers, program and contact information for the conference can be found at http://www.ans-rpsw-carlsbad.com/.

PHYSOR 2006

The Canadian Nuclear Society has announced that the ANS Reactor-Physics Topical PHYSOR-2006, “Advances in Nuclear Analysis and Simulation,” will be held in Vancouver, BC, Canada, Sept. 10–14, 2006. The meeting is sponsored by the Reactor Physics Division of the ANS and co-sponsored by a host of international societies. The conference will be held at the Hyatt Regency in downtown Vancouver.

You are invited to visit the meeting website at http://www.cns-snc.ca/physor2006/ to obtain updated information and to download a copy of the call for papers. The conference chair is Benjamin Rouben, FCNS Manager, Reactor Core Physics Branch, AECL Sheridan Park (phone 905-823-9060 x 4550, fax: 905-822-0567, email: roubenb@aecl.ca). The technical program co-chair is Ken Kozier, Atomic Energy of Canada Limited (AECL), Chalk River Laboratories, Chalk River, Ontario, Canada K0J 1J0 (Phone: +1-613-584-8811 + ext.5059, email: physor2006@aecl.ca).

CALENDAR

September 2005

XIX Nuclear Physics Divisional Conference (NPDC19) of the European Physical Society, Sept. 5–9, 2005, Pavia, Italy. Contact: Saverio Altieri (email saverio.altieri@pv.infn.it, url http://www.pv.infn.it/~npdc19).

MCNPX Advanced Workshop, Sept. 5–9, 2005, Bologna, Italy. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com for details).

International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear Biological Applications (M&C 2005), Sept. 12–15, 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/.

Introduction to MCNP, Sept. 27–30, 2005, Los Alamos National Laboratory. Contact: Cheryl Royer, croyer@lanl.gov (phone: 505-665-2154, http://laws.lanl.gov/x5/MCNP/aug05var.html).

October 2005

11th International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Oct. 2–6, 2005, Avignon, France. For more information: http://nureth11.com, nureth11@cea.fr.

10th Workshop on Monte Carlo Simulation of Radiotherapy Treatment Sources using the BEAM Code System, Oct. 3–6, 2005, Ottawa, Canada. Contact: Dave Rogers, Physics Department, Carleton University, 1125 Colonel By Drive, Ottawa, Ontario, Canada, K1S 5B6 (tel 613-520-2600x4374, fax 613-520-4061, email drogers@physics.carleton.ca, url www.physics.carleton.ca/~drogers/BEAM/course/brochure.html).

SCALE Source Terms and Shielding Course, Oct. 17–21, 2005, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/training.htm.

KENO V.a Criticality Safety Course, Oct. 24–28, 2005, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/training.htm.

TSUNAMI Sensitivity/Uncertainty Tools, Oct. 31–Nov. 3, 2005, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/training.htm.

MCNPX Intermediate Workshop, Oct. 31–Nov. 4, 2005, Santa Fe, NM. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com).

November 2005

ANS Winter Meeting and Nuclear Technology Expo, "Talk About Nuclear Differently: A Good Story Untold," November 13–17, 2005, Washington, D.C. Contact: http://www.ans.org/meetings/.

Radiation Process Simulation and Modeling User Group (RPSMUG), Nov. 17–18, 2005, Arlington, Virginia. Contact: Michael C. Saylor (phone 703-207-0159; email mcs@his.com; web www.rpsmug.org).

January 2006

MCNPX Introductory Workshop, Jan. 9–13, 2006, Las Vegas, NV. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com).

March 2006

HEART Conference, March 6–10, 2006, Santa Clara, CA. Contact: Technical Program Chair, Dennis Breuner (phone 858-720-7072, email dbreuner@titan.com).

MCNPX Intermediate Workshop, Mar. 27–31, 2006, Capetown, South Africa. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com).

April 2006

14th Biennial Topical Meeting of the ANS Radiation Protection and Shielding Division, April 3–6, 2006, Carlsbad, New Mexico. Contact: http://www.ans-rpsw-carlsbad.com/.

June 2006

ANS Annual Meeting, "A Brilliant Future: Nexus of Public Support in Nuclear Technology," June 4–8, 2006, Reno, Nevada.

MCNPX Introductory Workshop, June 12–16, 2006, Santa Fe, NM. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com).

EXRS 2006–European Conference on X-Ray Spectrometry, June 19–23, 2006, Paris, France. Contact: exrs2006@cea.fr, http://www.nucleide.org/exrs2006/.

September 2006

PHYSOR-2006, "Advances in Nuclear Analysis and Simulation," will be held in Vancouver, BC, Canada, Sept. 10–14, 2006. Contact: Ken Kozier, Technical Program Co-Chair, Atomic Energy of Canada Limited (AECL), Chalk River Laboratories, Chalk River, Ontario, Canada K0J 1J0 (Phone: +1-613-584-8811 + ext.5059, email: physor2006@aecl.ca, web http://www.cns-snc.ca/physor2006/).

November 2006

ANS Winter Meeting and Nuclear Technology Expo, "Securing the Future in Times of Change," Nov. 12–16, 2006, Albuquerque, NM.