

# RSIC Newsletter

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## Oak Ridge National Laboratory

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*The whole art of teaching is only the art of awakening the natural curiosity of young minds for the purpose of satisfying it afterwards.—Anatole France*

The Proceedings of the Eighth International Conference on Radiation Shielding, held in Arlington, Texas, from April 24-28, 1994, are available from the American Nuclear Society. The two-volume set can be obtained for \$110 U.S. Send request and check written on a U. S. Bank to:

American Nuclear Society  
P. O. Box 97781  
Chicago, IL 60678-7781

You may also order by credit card (Visa, Master Card, American Express, or Diner's Club) and can FAX such orders to: 708-579-8314.

## CHANGES TO THE COMPUTER CODE COLLECTION

Three changes were made to the computer code collection during the month. A new code system was packaged and added and two existing code packages were updated to enhance performance.

### **CCC-200/MCNP4A**

**OP SYS:** UNIX, DOS

**Language:** Fortran 77

**Computers:** Many

**Format:** DOS, tar

The documentation for this general purpose Monte Carlo code system for calculating the time-dependent continuous-energy transport of neutrons, photons, and/or electrons in three-dimensional geometries has been updated with the addition of a new report. The "MCNP: Neutron Benchmark Problems" LA-12212 report demonstrates the accuracy of the MCNP program and indicates a high degree of reliability of modern computational methods and data.

MCNP4A is available in UNIX tar format on cartridge tape or on 29, 3.5-in. DS/HD (1.44 MB) diskettes in self-extracting compressed DOS files. In addition to the source files, MCNP4A executables are included for personal computer users. These were created on a PC/486 under DOS 6.0 using the Lahey Fortran F77L3-EM/32 Version 5.10 compiler. Reference: LA-12625 (1993). Fortran 77 and C; UNIX workstations, PC 386, Cray, Vax, IBM, Sun, DEC, HP and SGI (C00200/ALLCP/02).

**CCC-545/SCALE4.2****OP SYS:** AIX, MVS**Language:** Fortran 77, C**Computers:** IBM3090,  
IBM RS/6000**Format:** tar

This package has been enhanced with the addition of material intended to assist users installing the system on computers other than IBM RS/6000 under AIX. SCALE4.2 is a modular code system for performing standardized computer analyses for licensing evaluation. In its present form, the system performs criticality, shielding, and heat transfer analyses using well established functional modules tailored to the SCALE system. The SCALE4.2 system has now been installed on Sun under both SunOS4 and Solaris, on DEC workstations running ULTRIX, and on DEC Alpha under both OSF1 and Open VMS. Many of these changes are also necessary for HP systems. A new information file includes advice for running SCALE4.2 on many systems.

Some source file changes are also available. At least one additional C routine has been written, and other Fortran and C sources have been made more generic. Some scripts have also been modified. This material is available on diskette and will be mailed to any user of the SCALE4.2 system who requests it.

The current distribution is configured to run on IBM RS/6000. The source codes, data libraries, JCL and script files are transmitted on either DC 6150 (150 MB), 4 mm DAT (8 GB), or 8 mm (2.3 GB) cartridge tapes in compressed tar format. Approximately 350 MB of disk space is required to read the tape, create executables and binary libraries, and run sample problems. References: NUREG/CR-200, ORNL/NUREG/CSD-2/R4 Volumes 1,2, and 3 (Draft Nov. 1993). Fortran 77 and Assembler for IBM 3090 and Fortran 77 and C for workstations (C00545/IRISC/01).

**CCC-631/  
RADCOMPT 2.10L****OP SYS:** DOS**Language:** C**Computers:** PC**Format:** DOS

The MK-Ferguson Company of Oak Ridge, Tennessee, contributed this sample analysis code system for the dual channel counter. RADCOMPT is used for the determination of sample activity, minimum sample counting time, minimum detectable activity, and minimum detectable concentration for wipe samples and air samples. It may also be used for other sample types. The program also calculates the true count rates for wipe samples, the air sample volume needed to meet required limits for air sampling, long-lived activity, and derived air concentration hours with an estimate of the committed effective dose equivalent. RADCOMPT automatically corrects for crosstalk between channels, leading to a significant increase in accuracy of the calculated activities.

Borland's Turbo C++ compiler v1.01 was used to create the executable included in the package. It runs on IBM PC's and compatibles with greater than 610 K available conventional memory available to compile the source files. A math coprocessor is desirable. Reference: Informal Report (Dec. 1993). C; IBM PC (C00631/IBMPC/00).



## ANS Professional Division Election Results

The results of the 1994–1995 professional division elections of interest to RSIC readers are as follows:

**Fuel Cycle and Waste Management**—Dillard  
B. Shipler, chair; Linda M. Ulland, vice chair;

James P. Malone, secretary/treasurer. Executive  
Committee: Susan G. Bilhorn, Donald E. Clark,

David M. Dawson, Martin N. Haas, Robert G. Lallement, Larry C. Oyen, Nancy E. Rothermich, Thomas R. Stevens, and Walt H. Wolf.

**Fusion Energy**—Ronald L. Miller, chair; Douglass E. Post, vice chair, Robert M. Mayo, secretary/treasurer. Executive Committee: James L. Anderson, Robert F. Bourque, Laila A. El-Guebaly, Charles A. Flanagan, Mohamed Y. Gohar, John R. Haines, David B. Harris, Wayne R. Meier, Kenneth R. Schultz, and Mark S. Tillack.

**Mathematics and Computation**—R. Arthur Forster, chair; Paul J. Turinsky, vice chair; Michael A. Robinson, secretary; Tunc Aldemir, treasurer. Executive Committee: Christa Boman, Dan G. Cacuci, J. Michael Doster, Elmer E. Lewis, Anil K. Prinja, James A. Rathkopf, Richard Sanchez, Charles A. Sparrow, Thomas M. Sutton, and Jasmina L. Vujic.

**Nuclear Criticality Safety**—Robert D. Busch, chair; Richard E. Anderson, vice chair; Dennis A. Tollefson, secretary; Valerie L. Putman, treasurer. Executive Committee: Michaele C. Brady, Douglas W. Croucher, Paul D. Felsher, David J. Lindenschmidt, John S. Pearson, Burton M.

Rothleder, Robert L. Seale, and Michael J. Vehec.

**Nuclear Reactor Safety**—Mario H. Fontana, chair; Annick Carnino, vice chair; Edward A. Warman, secretary/treasurer. Executive Committee: David J. Diamond, George F. Flanagan, William Hancox, Robert E. Henry, John R. Ireland, Wayne K. Lehto, Gail H. Marcus, John A. Raulston, Thomas E. Tipton, Jr., and Norman Weber.

**Radiation Protection and Shielding**—Leland L. Carter, chair; Nolan E. Hertel, vice chair; Bernadette L. Kirk, secretary; Richard M. Rubin, treasurer. Executive Committee: Guy P. Estes, Donald R. Harris, Jr., Andrew D. Hodgdon, Gerald P. Lahti, Robert C. Little, Stephen L. Ostrow, John W. Poston, Robert W. Roussin, and Leon West.

**Reactor Physics**—Dimitrios Cokinos, chair; Thomas J. Downar, vice chair; David J. Diamond, secretary; Michaele C. Brady, treasurer. Executive Committee: Ray G. Gamino, Mark L. Kantrowitz, Russell D. Mosteller, William F. Naughton, Theodore Parish, John M. Ryskamp, Kord S. Smith, and Brian A. Worley.



## PERSONAL NOTES

**John H. Hubbell** was elected President of the International Radiation Physics Society (IRPS) at the recent triennial meeting held in Rabat, Morocco, July 18–22, 1994. John retired from the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland, in 1988. However, he still does contract work for the NIST and has served as editor-in-chief of *Radiation Physics and Chemistry* since 1992.



## CONFERENCES, COURSES, SYMPOSIA

RSIC 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 to RSIC.

## **ENEA Sponsors MCNP Workshop**

A workshop on variance reduction schemes developed at ENEA for use with MCNP will be held at Bologna, Italy, November 28–December 1. Anyone interested should contact K.W.Burn at:

KWB@IBOENEA.BITNET (BITNET)

KWB%IBOENEA.BITNET@ICINECA.CINECA.IT (INTERNET)

Tel: (39) - 51 - 6098486

Fax: (39) - 51 - 6098629

(Italy)

## **MCNP to be Featured at ANS Winter Meeting**

Two technical sessions will be devoted to MCNP at the American Nuclear Society Winter Meeting, Washington, D.C., November 13–17. Free consulting on MCNP problems and a demonstration of Justine, the exciting new MCNP Graphical User Interface (GUI), will be given. Justine interactively sets up MCNP geometries in 2D and 3D, automatically runs THREEDANT to get adjoint importances which are then superimposed on MCNP for automatic variance reduction, and much more.

## **SCALE Training Course Scheduled**

A training course for users of the SCALE code system will be held April 24-28, 1995, in Oak Ridge, Tennessee. The course is being sponsored by the DOE Transportation and Packaging Safety Division and will be hosted by the Radiation Shielding Information Center (RSIC) at ORNL. The course will be taught by staff of the ORNL Computing Applications Division who are responsible for the development and maintenance of the SCALE system. The instructors will review the capabilities and limitations of the system modules with emphasis on areas of interest/concern to experienced users of the system. Hands-on experience with practical problems will be provided attendees via special sessions that utilize the workstation and PC versions of the SCALE system maintained by ORNL. (The PC version contains only the criticality analysis portion of SCALE.) Problems arising in design and review analyses for transport packages will be emphasized. Prior to the course, attendees may submit problems for discussion and, possibly, for solution on the workstation or PC version.

A tentative agenda is provided below. The number of attendees will be limited. A form is included on the back page of this *Newsletter* that can be returned to reserve your space at the course. Your responses on this form will be used to help formulate the final agenda and workshop structure.

### **Tentative Course Agenda**

Registration

Opening Remarks

System Overview — Background, current status

System Installation/Implementation Issues

Cross Section and Material Processing

Workshop I: OFFSCALE, CSASN, CSASIX, NITAWL-II

Discussion of Workshop I

Criticality Safety Sequences

Workshop II: CSAS1, CSAS25, CSAS4, KENO V.a

Discussion of Workshop II

Depletion/Decay Capabilities  
 Workshop III: SAS2H, ORIGNATE, ORIGEN-S  
 Discussion of Workshop III

Shielding Analysis Capabilities  
 Workshop IV: SAS1, SAS4, XSDRNPM, MORSE-SGC  
 Discussion of Workshop IV

Heat Transfer Capabilities  
 Workshop V: HTAS1, HEATING  
 Discussion of Workshop V

Closing Session: Questions and Answers

## **International Conference on Mathematics and Computations, Reactor Physics, and Environmental Analyses**

The Eastern Washington Section of the American Nuclear Society with the Mathematics and Computation, the Reactor Physics, and the Environmental Divisions are sponsoring the *International Conference on Mathematics and Computations, Reactor Physics, and Environmental Analyses*, which will be held April 30–May 4, 1995, in Portland, Oregon. The conference will offer an opportunity to present and study state-of-the-art techniques in the computational aspects of reactor physics, shielding, criticality, environmental transport, radiological source terms determination, medical imaging, radiation therapy, risk assessment, and a variety of other topics. A vendor show will be available during the meeting. In addition, a workshop will be offered on MCNP, a Monte Carlo code for shielding, criticality, dosimetry, and novel applications in the environmental areas. Registration information may be obtained from: Neil Norman, Parsons Environmental Services, Inc., Suite 415, 1955 Jadwin Ave., Richland, WA 99352 (phone 509-946-5849; fax 509-946-8748).

### **X ENFIR/III ENAN Joint Call for Papers**

The biennial *ENFIR/ENAN Joint Conference* organizing committee has issued the call for papers for the meeting to be held August 7–11, 1995, in Águas de Lindóia City, Brazil. The purpose of the X ENFIR is to advance the knowledge on how the growing worldwide energy demand can be met with the least environmental harm. The III ENAN is concerned with the benefits to be derived from nuclear applications. The organizers believe that the topics for both meetings will bring together scientists and engineers with a common interest in the advanced and safe applications of nuclear science and who are aware of the importance of nuclear energy to sustainable development.

The topics for X ENFIR are: Neutronics, Thermal Hydraulics, Safety Analysis, Radiation Shielding, Reactor Operation Experience, Nuclear Fuel Performance, and Applied Mathematics & Computation. Additional information about X ENFIR may be obtained from Dr. Wilma S. Bastos, IEN/CNEN, CP 68550, CEP 21945-970, Rio de Janeiro, RJ-Brazil (fax 55-21-590-2692; email IENBCB@BRLNCC.BITNET).

The topics for III ENAN are: Radiation Protection & Dosimetry, Radiochemistry, Environmental Sciences, Nuclear Instrumentation, Waste Management, Industry & Mining, Medicine & Health, Agriculture, Biology, Radioisotope Production, Hydrology & Sedimentology, and Irradiators, Materials & Training. Additional information for III ENAN may be obtained from Dr. Celeste Vasconcelos, CDTN/CNEN, CP 941, CEP 30161-970, Belo Horizonte, MG-Brazil (fax 55-31-443-4744; email ENAN@BRLNCC.BITNET).

## REAC/TS Radiation-Accident Courses

The Radiation Emergency Assistance Center/Training Site (REAC/TS) in Oak Ridge, Tennessee, is part of the Medical Sciences Division of the Oak Ridge Institute for Science and Education established by the U.S. Department of Energy to undertake national and international programs in science and engineering education, training and management systems, energy and environment systems, and medical sciences. The REAC/TS staff offers several courses in the handling of radiation accidents. A brief description of the courses follows.

*Handling of Radiation Accidents by Emergency Personnel* is a 3½-day course designed for emergency room nurses and physicians who may need to administer initial hospital aid to a radiation accident victim. Lectures, complemented by demonstrations, laboratory exercises, and a simulated radiation accident drill, will emphasize the handling of the victim. Discussions include the fundamentals of radiation, detection and measurement, prevention of the spread of contamination, dose reduction for the victim and attending personnel, and the role of the medical physicist in caring for contaminated accident victims.

*Occupational Health in Nuclear Facilities* is a 4½-day course for nurses, physicians, and others who provide occupational health care to employees of government nuclear facilities. Information will be given on basic radiation sciences, health surveillance and evaluation, on-site emergency management of injuries, and medical implications of chemical, physical,

biological, social, and psychological stresses on the ability to work. Interdepartmental relationships and medical, legal, and ethical issues will also be discussed.

*Health Physics in Radiation Accidents* is a 4½-day course for health physicists and radiation protection technologists who may be called upon to respond to accidents involving radioactive materials and injury to personnel. The major topics are radiological emergency procedures and the role of the health physicist in a medical environment.

*Medical Planning and Care in Radiation Accidents*, a 4½-day course designed for physicians, presents an advanced level of information on diagnosis and treatment of acute local and total body radiation exposure, internal and external contamination, combined injuries, and multi-casualty incidents involving ionizing radiation.

The course dates and registration information may be obtained from Pat Cooley, Registrar, REAC/TS, Oak Ridge Inst. for Science & Education, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3131).

## Calendar

Your attention is directed to the following events of interest.

### October 1994

*2nd Biennial Decommissioning Conference*, Oct. 16–19, 1994, Captiva Island, Florida, sponsored by TLG Services, Inc. Contact: Lori Metcalf, phone 203-355-0415.

#### *Radioactive Low-Level and Mixed Waste*

*Workshop—Everything You Ever Needed to Know About Generating, Handling, Storing, and Disposing of Low-Level and Mixed Waste*, Oct. 17–19, 1994, Gainesville, Florida, sponsored by the National Low-Level Waste Program, Southeast Compact Commission, and the Dept. of Nuclear Engineering Sciences at the University of Florida. Contact: James S. Tulenko, Dept. of Nuclear Engg. Svcs., 202 Nuclear Sciences Center, P.O. Box 118300, University of Florida, Gainesville, FL 32611-8300 (phone 904-392-1401; fax 904-392-3380).

#### *9th Annual Conference on Contaminated Soils:*

*Analysis, Fate, Environmental & Public Health Effects and Remediation*, Oct. 17–20, 1994,

Amherst, Massachusetts, sponsored by the University of Massachusetts. Contact: Paul Kostecki, phone 413-545-2934.

*Decontamination/Decommissioning of DOE and NRC Regulated Facilities*, Oct. 17–21, 1994, Knoxville, Tennessee, a technical short course offered by Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440; fax 203-738-9322).

*International Symposium on Nuclear and Related Techniques on Soil/Plant Studies on Sustainable Agriculture and Environmental Preservation*, Oct. 17–21, 1994, Vienna, sponsored by the International Atomic Energy Agency. Contact: IAEA, Conference Service Section, P.O. Box 100, A-1400 Vienna, Austria (phone 43-1-2360-1310; fax 43-1-234-564).

*Defense Cleanup Northwest*, Oct. 18–19, 1994, Seattle, Washington, sponsored by Pasha Publications.

Contact: Defense Cleanup, Suite 230, 1311 Northwest Freeway, Houston, TX 77040 (phone 713-460-9200).

*3rd International Conference on Containment Design and Operation*, Oct. 19–21, 1994, Toronto, Canada. Contact: CNS, 144 Front St. West, Suite 725, Toronto, Ont., Canada M5J 2L7 (phone 416-977-7620).

*4th Conference on Radiation Protection and Dosimetry*, Oct. 23–27, 1994, Orlando, Florida. Contact: J. S. Bogard, phone 615-574-5851.

*6th World Congress of the World Federation of Nuclear Medicine and Biology*, Oct. 23–28, 1994, Sydney, Australia. Contact: 6th World Congress Secretariat, Australia phone 61-2-241-1478; fax 61-2-251-3552.

*Fourth Conference on Radiation Protection and Dosimetry*, Oct. 24–26, 1994, Orlando, Florida, sponsored by the Oak Ridge National Laboratory. Contact: J. S. Bogard, ORNL, P.O. Box 2008, Oak Ridge, TN 37831-6379 (phone 625-574-5851, fax 615-574-9174).

*International Symposium on Global Environment and Nuclear Energy Systems*, Oct. 24–27, 1994, Shizuoka, Japan. Contact: Akinao Shimizu or Hiroshi Tomiyasu, Research Laboratory for Nuclear Reactors, Tokyo Institute of Technology, O-okayama, Meguro-ku, Tokyo 152, Japan (phone 81-3-3734-3062; fax 81-3-5734-2925).

*International Conference on Radiation and Society: Comprehending Radiation Risks*, Oct. 24–28, 1994, Paris, sponsored by the IAEA. Contact: IAEA, IAEA-CN-54, P.O. Box 100, A-1400 Vienna, Austria (fax 43-1234564).

*Fundamentals of Radiation Safety*, Oct. 24–28, 1994, Toronto, Canada, a technical short course offered by Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440; fax 203-738-9322).

*NRRPT Exam Preparation*, Oct. 24–28, 1994, Las Vegas, Nevada. Contact: Nevada Technical Associates, Inc., P.O. Box 90748, Henderson, NV 89009 (phone 702-564-2798).

*Nuclear Science Symposium: Medical Imaging Conference*, Oct. 30–Nov. 5, 1994, Norfolk, Virginia, sponsored by the U.S. Department of Energy, the Institute of Electrical and Electronics Engineers, and the Stanford Linear Accelerator Center.

Contact: L. A. Kleisner, SLAC, P.O. Box 4349, MS 12, Stanford, CA 94309.

*HSRD/ORNL Conference on Applied Environmental Assessment: Site Characterization and Risk Assessment*, Oct. 31–Nov. 3, 1994, Orlando, Florida, sponsored by the Oak Ridge National Laboratory Health Sciences Research Division. Contact: Sue Huckaba, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6480 (phone 615-576-2100; fax 615-574-9888).

#### **November 1994**

*International Conference on Physical Insult From and Biological Responses to Ionizing Radiation*, Nov. 3–4, 1994, Upton, New York. Contact: E. P. Cronkite, Medical Dept. Brookhaven National Laboratory, Upton, NY 11971 (fax 516-282-5311).

*13th International Conference on the Application of Accelerators in Research and Industry*, Nov. 7–10, 1994, Denton, Texas. Contact: Jerome L. Duggan, The University of North Texas, Dept. of Physics, P.O. Box 5368, Denton, TX 76203-5368 (phone 817-565-3252/3250; fax 817-565-2227; email fc66@untvax.bitnet).

*Calibration of Radiation Survey Instruments*, Nov. 7–11, 1994, Knoxville, Tennessee. Contact: Consultec Scientific, Inc., 725 Pellissippi Parkway, Suite 110, Knoxville, TN 37932-3300 (phone 800-269-4333; fax 615-675-4334; email info@consultec.com).

*Fundamentals of Radiochemistry*, Nov. 7–11, 1994, Las Vegas, Nevada. Contact: Nevada Technical Associates, Inc., P.O. Box 90748, Henderson, NV 89009 (phone 702-564-2798).

*International Conference on Radiation, Health and Society: Comprehending Radiation Risks*, Nov. 7–12, 1994, Paris, sponsored by the International Atomic Energy Agency. Contact: IAEA, Conference Service Section, P.O. Box 100, A-1400 Vienna, Austria (phone 43-1-2360-1310; fax 43-1-234-564).

*22nd Annual Meeting of the Argentinian Nuclear Technology Association*, Nov. 8–11, 1994, Buenos Aires, Argentina. Contact: Assoc. Argentina de Tecnologia, Av. Callao 384, 1022 Buenos Aires, Argentina (phone/fax 54-1-476-2013).

*Symposium on Radioactive and Mixed Wastes—Risk as a Basis for Waste Classification*, Nov. 9, 1994, Las Vegas, Nevada. Contact: National Council on Radiation Protection and Measurements, 7910

Woodmont Ave., Suite 800, Bethesda, MD 20814-3095 (phone 301-657-2652).

*2nd ANS Workshop on the Safety of Soviet-Designed Nuclear Power Plants*, Nov. 12–13, 1994, Washington, D.C., held in conjunction with the 1994 ANS Winter Meeting. Contact: Robert Bari, Brookhaven National Laboratory, Bldg. 197C, Upton, NY 11973 (phone 516-282-2629; fax 516-282-5266).

*1994 ANS Winter Meeting: The State of the Industry*, Nov. 13–17, 1994, Washington, D.C. Contact: ANS Meetings Dept., 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 708-579-8258).

*Embedded Topical Meeting on Decommissioning, Decontamination, and Environmental Restoration*, Nov. 13–17, 1994, Washington, D.C. Contact: Argonne National Laboratory, OQA/EWM-201, Ms. M. G. White, 9700 S. Cass Ave., Argonne, IL 60439 (fax 708-252-5965).

*Embedded Topical Meeting on the Physics, Safety, and Applications of Pulse Reactors*, Nov. 13–17, 1994, Washington, D. C. Contact: General Chair David Hetrick, University of Arizona, Dept. of Nuclear Engg., Tucson, AZ 85721 (phone 602-621-2514).

*40th Annual Conference on Bioassay, Analytical, and Environmental Radiochemistry*, Nov. 14–18, 1994, Cincinnati, Ohio. Contact: Dr. Henry Spitz, 40th Bioassay Conference, P.O. Box 9346, Cincinnati, OH 45209 (phone 513-556-2003, Internet seg3.nioshe2.em.cdc.gov), or Sam Glover (phone 513-841-4400, Internet seg3.nioshe2.em.cdc.gov).

*Workshop for Current MCNP4A/SABRINA Users*, Nov. 14–18, 1994, a workshop presented by Experimental and Mathematical Physics Consultants, P.O. Bxo 3191, Gaithersburg, MD 20885 (phone 301-869-2317; fax 301-963-3902).

*1st International Symposium on Ionizing Radiation and Polymers*, Nov. 14–19, 1994, Saint-Francois, France, sponsored by CEA Centre d'Etudes Nucleaires de Saclay. Contact: CEA-CE Saclay, DSM/DRECAM/SRSIM/LPI, A. Le Moel, F-91191, Gif sur Yvette Cedex, France (fax 33-1-69089600).

*3rd Annual Meeting of the Council on Ionizing Radiation Measurements and Standards (CIRMS)*, Nov. 16–18, 1994, Gaithersburg, Maryland, sponsored by the National Institute of Standards and Technology. Contact: Bert Coursey, C229 Radiation Physics Bldg. NIST, Gaithersburg, MD 20899-0001 (phone 301-975-5584; fax 301-869-7682; email coursey@micf.nist.gov).

*2nd Radiation Physics Conference*, Nov. 20–24, 1994, Sadaat City, Egypt, sponsored by the Atomic Energy Authority, Menoufia University. Contact: Prof. M. A. Gomaa, Atomic Energy Authority, 101. Kasr El-Aini Street, Cairo, Egypt (phone 02-355-8269/8264, fax 02-354-0982).

*Joint Meeting of the American Association of Physicists in Medicine with the Radiological Society of North America*, Nov. 27–Dec. 2, 1994, Chicago, Illinois. Contact: Executive Officer, AAPM, 335 E. 45th St., New York, NY 10017 (phone 212-661-9404).

*18th Conference of the Nuclear Societies in Israel*, Nov. 28–29, 1994, Tel-Aviv, Israel. Contact: E. Elias, Mech. Engg., Technion, Haifa, Israel 32000 (phone 9724-293263; fax 9724-324533; email nerro02@technion.technion.ac.il).

*Workshop on Various Reduction Schemes Developed at ENEA for Use With the MCNP Transport Code*, Nov. 28–Dec. 1, 1994, Bologna, Italy. Contact: K. W. Burn (kwb@iboenea.bitnet, Internet kwb@iboenea.bitnet%icineca.cineca.it).

#### **December 1994**

*Safe Use of Radionuclides*, December 5–9, 1994, in Oak Ridge, Tennessee, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576 or 615-241-4888; fax 615-576-9383).

*Modifying MCNP4A for Special Applications*, Dec. 12–16, 1994, a workshop presented by Experimental and Mathematical Physics Consultants, P.O. Bxo 3191, Gaithersburg, MD 20885 (phone 301-869-2317; fax 301-963-3902).

*16th U.S. Department of Energy Low-Level Radioactive Waste Management Conference*, Dec. 13–15, 1994. Contact: Donna Lake, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415-2420 (fax 208-526-9165).

#### **February 1995**

*International Conference on Internal Radiation Dosimetry: Occupational Workers and the Public*, Feb. 21–24, 1995, Bombay, India, sponsored by the Indian Association of Radiation Protection. Contact: Dr. R. C. Sharma, IARP, Low-Level Counting Laboratory, BARC Hospital, Anushaktinagar, BARC 40 094, India (phone 91-022-5512936; fax 91-2-5560750).



**March 1995***Radiation Transport Calculations Using the EGS4*

*Monte Carlo System*, Mar. 6–9, 1995, Seattle, Washington. Contact: Ms. Suzan Walker, Computer Services Director, The Lawrence H. Lanzl Inst. of Medical Physics, 3876 Bridge Way N., Suite 300, Seattle, WA 98103-7951 (phone 206-545-1141; fax 206-545-1347; email suzan\_walker@lanzl.com).

*1995 HEART Conference*, Mar. 13–17, 1995, Sandia National Laboratories, Albuquerque, New Mexico. Contact: Delores Walters, JAYCOR, P.O. Box 85154, San Diego, CA 92138 (619-535-9763).

*Gamma Spectroscopy*, March 20–24, 1995, in Oak Ridge, Tennessee, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576 or 615-241-4888; fax 615-576-9383).

*5th Topical Meeting on Tritium Technology in Fission, Fusion, and Isotopic Applications*, Mar. 26–31, 1995, Augusta, Georgia, sponsored by the ANS. Contact: C. E. Murphy, Westinghouse SRC, Savannah River Lab., Aiken, SC 29808.

*Health Physics for the Industrial Hygienist*, March 27–31, 1995 in Oak Ridge, Tennessee, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576 or 615-241-4888; fax 615-576-9383).

**April 1995**

*Applied Health Physics*, Apr. 10–May 12, 1995, in Oak Ridge, Tennessee, a five-week course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576 or 615-241-4888; fax 615-576-9383).

*31st Annual Meeting of the National Council on Radiation Protection and Measurements*, Apr. 12–13, 1995, Arlington, Virginia. Contact: NCRPM, Suite 800, 7910 Woodmont Ave., Bethesda, MD 20814-3095 (phone 800-229-2652; fax 301-907-8768).

*5th Topical Meeting on Emergency Preparedness and Response*, Apr. 18–21, 1995, Savannah, Georgia, sponsored by the American Nuclear Society Savannah River Section. Contact: Charles H. Hunter, Jr., Technical Program Chairman, Westinghouse Savannah River Co., Bldg. 773-A,

Aiken, SC 29808 (phone 803-725-2953; fax 803-725-4233).

*ICONE-3, The Third International Conference on Nuclear Engineering—Nuclear Power and the Energy Future*, Apr. 23–27, 1995, Kyoto, Japan. Contact: Mr. M. Takahashi, Japan Society of Mechanical Engineers, Shinjuku-Sanshin Bldg. 5F, 2-4-9 Yoyogi, Shibuya-ku, Tokyo 151 Japan (phone 81-3-3379-6781; fax 81-3-3379-0934).

*International Conference on Mathematics and Computations, Reactor Physics, and Environmental Analyses*, Apr. 30–May 4, 1995, Portland, Oregon. Contact Ms. L. Briggs, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439.

**May 1995**

*1995 International High-Level Radioactive Waste Management Conference*, May 1–5, 1995, Las Vegas, Nevada. Contact: Allen G. Croff, American Nuclear Society, 555 N. Kensington Ave., La Grange Park, IL 60525.

**June 1995**

*Air Sampling for Radioactive Materials*, June 12–16, 1995, in Oak Ridge, Tennessee, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576 or 615-241-4888; fax 615-576-9383).

*Environmental Monitoring*, June 26–30, 1995 in Oak Ridge, Tennessee, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576 or 615-241-4888; fax 615-576-9383).

**July 1995**

*Joint Annual Meeting of the Health Physics Society and the American Association of Physicists in Medicine to Celebrate the X-Ray Centennial*, July 23–27, 1995, Boston, Massachusetts. Contact: Health Physics Society, ATTN: Richard J. Burke, Jr., Suite 130, 8000 Westpark Drive, McLean, VA 22102 (phone 703-790-1745; fax 703-790-9063) or American Association of Physicists in Medicine, ATTN: Salvatore Trofi, Jr., One Physics Ellipse, College Park, MD 20740-3846 (301-209-3350; fax 301-209-0862).

**August 1995**

*10th Brazilian Meeting on Reactor Physics and Thermal Hydraulics (X ENFIR) and the 3rd Brazilian Meeting on Nuclear Applications (III ENAN)*, Aug. 7–11, 1995, Rio de Janeiro, Brazil. Contact: Wilma S. Bastos, IEN, C.P. 68550, CEP-21945.970, RJ, Brazil (fax 55-21-5902692; email IENRCB@BRLNCC.BITNET).

*Safe Use of Radionuclides*, August 21–25, 1995, in Oak Ridge, Tennessee, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576 or 615-241-4888; fax 615-576-9383).

**September 1995**

*Environmental Monitoring*, September 11–15, 1995, in Oak Ridge, Tennessee, a short course sponsored by Oak Ridge Associated Universities. Contact:

Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576 or 615-241-4888; fax 615-576-9383).

*Applied Health Physics*, September 18–October 20, 1995, in Oak Ridge, Tennessee, a five-week course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge TN 37831-0117 (phone 615-576-3576 or 615-241-4888; fax 615-576-9383).

*16th Symposium on Fusion Engineering*, Sept. 30–Oct. 4, 1995, Urbana, Illinois. Contact: Cella Elliott, Conference Secretary, Fusion Studies Lab., University of Illinois, Urbana, IL 61801 (phone 217-333-2772; fax 217-333-2906; email miley@uiucvmd.bitnet).

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## AUGUST ACCESSION OF LITERATURE

The following literature cited has been ordered for review, and that selected as suitable will be placed in the RSIC Information Storage and Retrieval Information System (SARIS). This early announcement is made as a service to the shielding community. Copies of the literature are not distributed by RSIC. 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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