



RSIC Newsletter

Oak Ridge National Laboratory

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Do something for somebody every day for which you do not get paid.—Albert Schweitzer

NEA/RSIC Personnel Exchange

Enrico Sartori, of the Nuclear Energy Agency (NEA) Data Bank in Paris, arrived on Monday, January 10, 1994, for an 8-week assignment with the Radiation Shielding Information Center. Enrico is in charge of the computer program services for the NEA Data Bank, which serves western European countries, and Japan. RSIC has had a long and beneficial collaboration with Data Bank staff over the years. The NEA and the U.S. Department of Energy (DOE) have an arrangement for the exchange of technical software and data between the NEA Data Bank and RSIC, which includes the exchange of personnel. We have had few chances for extended exchanges in the past, but hope that these can be done more frequently in the future. Since the two Centers have similar missions and programs, the visit will offer an opportunity to coordinate shared procedures.

The objectives of this exchange are: (1) to improve implementation of the cooperative arrangement through discussion, identification, and implementation of common standards in the computer program exchange and; (2) to work with Engineering Physics and Mathematics Division personnel on the Radiation Shielding Experiment Data Base, a program of the Nuclear Science Committee to coordinate the collection and preservation of essential and comprehensive data sets from experiments carried out on radiation shielding facilities. The data will be stored in a computerized data base for easy retrieval by the radiation shielding community for validating shield design and analysis tools.

Sartori will use this period to finalize the plans for meetings being jointly organized with RSIC. He will also participate with members of the Computing Applications Division in studies of the NEA Criticality Safety Working Group.

8th International Conference on Radiation Shielding

The Radiation Protection and Shielding Division and North Texas Section of the American Nuclear Society are the primary sponsors for the *8th International Conference on Radiation Shielding*. The meeting will be held in Arlington, Texas, April 24–27, 1994. Additional information and a registration form are included at the end of this newsletter.

CHANGES TO THE COMPUTER CODE COLLECTION

Four changes were made to the computer code collection during the month. Two existing code packages were updated, one code package was corrected, and an existing code package was replaced with a newly frozen version.

- CCC-112/SAND-II** This code system for neutron flux spectra determination by multiple foil activation using the iterative method has been updated by RSIC. The SAND-II executable file was recreated to bind the runtime modules with the Phar Lap DOS extender. The release for personal computers, contributed by Experimental and Mathematical Physics Consultants, Gaithersburg, Maryland, is a conversion of RSIC's C00112/I3675/00 SAND-II release, which was last modified in August 1977. The Lahey F77L-EM/32 compiler, Version 5.01, was used to create the executables included in the package, which run on 80386 or 80486 personal computers equipped with a math coprocessor. The package is transmitted on one DS/HD 5.25-in. (1.2 MB) diskette in self-extracting compressed DOS files. References: AFWL-TR-67-41 (Sept. 1967), BNWL-855 (Aug. 1968), and BNWL-1312 (May 1970). Fortran IV; CDC (C00112/C7600/00) and IBM 360 (C00112/I3675/00). Fortran 77; 80386 and 80486 PC; (C00112/IBMPC/01).
- OP SYS:** MVT, DOS
- Language:** Fortran IV,
Fortran 77
- Computers:** CDC, IBM
360, PC
- Format:** DOS
- CCC-200/MCNP4A** This general purpose Monte Carlo code system developed at Los Alamos National Laboratory for calculating the time-dependent continuous-energy transport of neutrons, photons, and/or electrons in three-dimensional geometries has been updated to include the ENDF/B-IV derived cross sections which were included in previous distributions of MCNP. These data libraries were omitted from the initial RSIC release of MCNP4A; and users who have already received this new release and need these files may contact RSIC to obtain the data, which are unchanged from the MCNP 4.2 release. MCNP4A is designed for MS-DOS PCs, Unix (Sun, HP, IBM RS/6000, SGI, DEC), Cray (UNICOS, COS, CTSS), and DEC (VMS). The DLC-105 package to which no changes have been made since the release of MCNP 4.2 includes ENDF/B-V derived libraries and is available upon request to users within the US.
- OP SYS:** UNIX, DOS,
VMS
- Language:** Fortran 77
and C
- Computers:** UNIX
workstations, PC
386, Cray, Vax,
IBM
- Format:** tar, DOS
- 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 (C00200/ALLCP/01).

- C00467/ITS 3.0** Sandia National Laboratories, Albuquerque, New Mexico, has notified RSIC of a correction which should be made to this integrated TIGER series of coupled electron/photon Monte Carlo transport codes, Version 3. In labeled common TEMP, the array MTAX(15) is specified. This array should be specified as MTAX(INTAB). INTAB is the maximum number of tables allowed to specify the photon cross sections for a given material. If there are more than 14 edge energies in a material, this array will be referenced out of range and can lead to a fatal error that may be difficult to debug. Users should contact RSIC for a copy of the letter for additional information. References: SAND91-1634 (March 1992) and informal notes. Fortran 77; Cray, IBM, VAX (C00467/MFMWS/00) or IBM PC (C00467/PC486/01).
- OP SYS:** UNIX, MVS, VMS, DOS
- Language:** Fortran 77
- Computers:** Cray, Sun, IBM, VAX, PC
- Format:** tar, DOS
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- C C C - 5 4 3 / T O R T - D O R T 2.8.14** Oak Ridge National Laboratory contributed a newly frozen version of this two- and three-dimensional discrete ordinates transport code system. The new release, designated TORT 2.8.14, includes many small improvements and corrections and now runs on Sun, Dec, and HP workstations in addition to Cray and IBM RISC 6000 computers. New codes TORSED and TORSET have been added to construct TORT boundary sources from external DORT or TORT flux files. The PC version was not updated and is version 2.7.3. The code system is transmitted either on tape cartridge in tar format or on four DS/HD 3.5-in. (1.44 MB) diskettes in self-extracting compressed DOS files. References: ORNL-6268 (Nov. 1987), ORNL-5851 (April 1982), ORNL/TM-8362 (Sept. 1982), ORNL/TM-12246 (Jan. 1993), ORNL/TM-12359 (Aug. 1993), and Informal reports. Fortran 77 and C; Cray, IBM RISC, Sun, HP, Dec (C00543/MFMWS/03) or PC 386 (C00543/PC386/OO).
- OP SYS:** UMX
- Language:** Fortran 77 and C
- Computers:** Cray, IBM RISC, Sun, HP, Dec
- Format:** tar, DOS

CHANGES TO THE DATA LIBRARY COLLECTION

Two changes were made to the data library collection during the month. A new data library was added to the collection and an existing data library was replaced with a newly frozen version. One changed resulted from a foreign contribution.

- DLC-161/IRDF90** The International Atomic Energy Agency, Vienna, Austria, contributed a newly frozen version of this International Reactor Dosimetry File, Version 2, for reactor neutron dosimetry by foil activation. It also contains selected recommended values for benchmark neutron spectra and radiation damage cross sections. This supersedes all earlier versions of IRDF and includes corrections and additions to covariance files and dosimetry reactions. The data in the original ENDF-6 format were processed to 640-group extended SANDII format in the Nuclear Data Section of the IAEA using the
- OP SYS:** DOS
- Language:** no retrieval program included

Computers: All	processing codes LINEAR, RECENT, and GROUPIE by D. E. Cullen. The covariance information is not processed by these codes and is contained in IRDF-90 in the original ENDF-6 format. The data are transmitted on one DS/HD diskette in self-extracting compressed DOS files. References: IAEA-NDS-141 Rev. 0 and 2 (Oct. 1993) and IAEA-NDS-11 Rev. 1 (April 1985). All computers (D00161/ALLCP/01).
Format: DOS	
DLC-167/FGR-DOSE	Oak Ridge National Laboratory contributed this data library of dose coefficients for both intakes and external exposures to radionuclides from Federal Guidance Reports 11 and 12. Dose coefficients for radionuclide intake (dose per unit activity inhaled or ingested) in FGR 11 were abstracted from the ICRP and the ORNL dosimetric data files assembled during the preparation of Publication 30 of the ICRP. The dose coefficients for external exposure (dose per unit radionuclide concentration) in FGR 12 are based on new calculations of the radiation field for nuclides distributed in environment. A data retrieval program READEM illustrates the manner the dose coefficient files might be accessed by other software. This program was compiled and linked using MS Fortran 5.0 under DOS 6.2. The package is transmitted on one DS/HD 5.25-in. (1.2 MB) diskette in self-extracting compressed DOS files. References: EPA 402-R-93-081 (Sept. 1993) and EPA-520/1-88-020 (Sept. 1988). All computers (D00167/ALLCP/00).
OP SYS: DOS	
Language: Fortran	
Computers: All	
Format: DOS	

Calendar

February 1994

Calibration of Nuclear Instruments, Feb. 7–11, 1994, New Orleans, Louisiana. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440; fax 203-738-9322).

Managing Radioactive and Mixed Waste, Feb. 13–17, 1994, Albany, New York, sponsored by the Health Physics Society. Contact: John M Matusek, NENYHPS, P.O. Box 2249, Empire State Plaza Station, Albany, NY 12220-2249.

1994 HEART Conference, Feb. 14–18, 1994, Monterey, California. Contact: Logicon/RDA, ATTN: 1994 HEART Conference, Mr. Ed. Quinn, 2100 Washington Blvd., Arlington, VA 22204-5706.

Radiation Detection & Measurement, Feb. 21–25, 1994, Orlando, Florida. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440; fax 203-738-9322).

Basic Radiological Health, Feb. 21–25, 1994, a continuing education course presented by the University of Texas at San Antonio. Contact: The University of Texas, Health Science Center at San Antonio, Continuing Medical Education, 7703 Floyd Curl Drive, San Antonio, TX 78284-7980 (phone 210-567-4444, Fax 210-567-6964).

WATtec '94, Innovation in the 21st Century, Feb. 22–25, 1994, Knoxville, Tennessee. Contact: WATtec, ATTN: Registration, P.O. Box 4935, Oak Ridge, TN 37831-4935 (phone 615-632-4511).

Principles of Health Physics (C.H.P. Park 1 Exam Study), Feb. 27–Mar. 4, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

March 1994

Implementation of the Radiological Control Manual, Mar. 3–4, 1994, Tucson, Arizona. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440; fax 203-738-9322).

Internal Dosimetry, Mar. 14–18, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

The Nuclear Fuel Cycle, Mar. 14–18, 1994, a short course sponsored by Continuing Education, University of Missouri-Rolla, 103 Mechanical Engineering Annex, Rolla, MO 65402-0249 (phone 314-341-4200, fax 314-341-60610).

11th International Conference on the Use of Computers in Radiotherapy, Mar. 20–24, 1994, Manchester, United Kingdom. Contact: J. M. Wilkinson, Christie Hospital, Withington, Manchester M20 9BX, GB.

April 1994

30th Annual Meeting of the National Council on Radiation Protection and Measurements, Apr. 6–7, 1994, Arlington, Virginia. Contact: National Council on Radiation Protection and Measurements, 7910 Woodmont Ave., Suite 800, Bethesda, MD 30814-3095 (phone 301-657-2652).

Methods and Applications of Radioanalytical Chemistry (MARC III), Apr. 10–16, 1994, Kona, Hawaii, an International Topical Conference of the American Nuclear Society. Contact Prof. Roy H. Filby, Technical Program Chairman, Department of Chemistry, Washington State University, Pullman, WA 99164-4630 (phone 509-335-3331, fax 509-335-8867).

Topical Meeting on Advances in Reactor Physics, Apr. 11–14, 1994, Knoxville, Tennessee, sponsored by the American Nuclear Society. Contact: B. A. Worley, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6363 USA (phone 615-574-6106).

High Performance Computing '94: Grand Challenges in Computer Simulation, Apr. 11–15, 1994, La Jolla, California, sponsored by the Society for Computer Simulation. Contact: Dr. Adrian Tetner, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439 (phone 708-252-8454).

ARS '94, International Meeting on Advanced Reactor Safety, Apr. 17–20, 1994, Pittsburgh, Pennsylvania. Contact: D. Squarer, Westinghouse Electric Corp., Science and Technology Center, 1310 Beulah Road, Pittsburgh, PA 15235-5098 USA (phone 412-256-2063; fax 412-256-1348).

8th International Conference on Radiation Shielding, Apr. 24–27, 1994, Arlington, Texas, sponsored by

the American Nuclear Society with cooperation from several international and professional societies. Contact: Dr. R. M. Rubin, TU Electric, 400 N. Olive St., LB81 24 SLIC, Dallas, TX 75201, or Nolan Hertel, Georgia Tech, Atlanta, Georgia 30332-0405 USA. R. W. Roussin is the International Liaison.

RECOD '94, 4th International Conference on Nuclear Fuel Reprocessing and Waste Management, Apr. 24–28, 1994, London. Contact: W. L. Wilkinson, RECOD '94 Steering Committee, British Nuclear Forum, 22 Buckingham Gate, London SW1E 6LB, United Kingdom. (phone 071-828-0116; fax 071-828-0110).

42nd Annual Meeting of the Radiation Research Society, Apr. 25–29, 1994, Nashville, Tennessee. Contact: Radiation Research Society, 1891 Preston White Drive, Reston, VA 22091.

Specialist's Meeting on Shielding Aspects of Accelerators, Targets, and Irradiation Facilities, April 28–29, 1994, Arlington, Texas. Contact: R. W. Roussin, RSIC, ORNL, P.O. Box 2008, Oak Ridge, TN 37831-6362 USA (phone 615-574-6176; fax 615-574-6182).

May 1994

9th Pacific Basin Nuclear Conference, May 1–5, 1994, Sydney, Australia. Contact: Australian Nuclear Association, P.O. Box 445, Sutherland, NSW 2232, Australia.

Advanced Health Physics (C.H.P. Part 2 Exam Study), May 1–6, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

International Workshop on Implementation of ALARA at Nuclear Power Plants, May 8–11, 1994, Long Island, New York. Contact: Dr. John W. Baum or Dr. T. A. Khan, Brookhaven National Laboratory, ALARA Center, Upton, Long Island, NY 11973 USA (phone 516-282-3228, Fax 516-282-5810).

International Conference on Nuclear Data for Science and Technology, May 9–13, 1994, Gatlinburg, Tennessee, USA. Contact: J. K. Dickens, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6356 USA (phone 615-574-6115).

Principles of Liquid Scintillation Counting, May 11–12, 1994, a continuing education course presented by North Carolina State University. Contact: Joni M. Tanner, Office of Continuing Education and Professional Development, Box

7401, Raleigh, NC 27695-7401 (phone 919-515-2261, Fax 919-515-7614).

1994 Symposium on Radiation Measurements and Applications, May 16–19, 1994, Ann Arbor, Michigan, the 8th in a series sponsored by the U.S. Department of Energy. Contact: Helen Lum, Symposium Secretary, 3034 Phoenix Memorial Laboratory, The University of Michigan, Ann Arbor, MI 48109-2100.

Radiation Safety Principles and Procedures, May 16–20, 1994, a continuing education course presented by North Carolina State University. Contact: Joni M. Tanner, Office of Continuing Education and Professional Development, Box 7401, Raleigh, NC 27695-7401 (phone 919-515-2261, Fax 919-515-7614).

Radioactive Materials Transport and Radwaste Disposal, May 16–20, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

June 1994

Radiation Safety Officer Training, June 13–17, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

Third International Symposium on Fusion Nuclear Technology, June 27–July 1, 1994, University of California, Los Angeles. Contact: Dr. Mark Tillack, 44-139 Engineering-IV, Univ. of California, Los Angeles, CA 90024-1597 (phone 310-206-1230; Fax 310-825-2599, Internet, MST@fusion.ucla.edu).

July 1994

First International Congress of Environmental Geotechnics: Geotechnical and Related Aspects of Waste Management Associated with Municipal, Mine, Industrial and Nuclear Wastes, July 10–15, 1994, Edmonton, Canada. Contact: D. C. Sego, University of Alberta, Dept. of Civil Engineering, Sego, Edmonton, TG6 2G7, Canada.

Environmental Health Physics, July 11–15, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

Planning for Radiation Emergencies, July 11–15, 1994, Guildford, Surrey, England. Contact: Prof. J.R.A. Lakey, c/o MOS Ltd, 17 Wrotham Road,

Gravesend, Kent DA11 OPA, UK (phone 44-0-474-350580, Fax 44-0-474-320042).

18th International Radiation Physics Society, July 18–22, 1994, Rabat, Morocco. Contact: Pr. M. Berrada, Lab. de Physique Nucléaire, Faculté des Sciences, B. P. 1014 Rabat, Morocco (Fax 212-7-77-99-78).

27th International Conference on High Energy Physics, July 21–27, 1994, Glasgow, United Kingdom. Contact: Institute of Physics, 47 Belgrave Square, London SW1X 8OX, UK.

October 1994

European Nuclear Conference and Exhibition, Oct. 2–6, 1994, Lyon, France. Contact: P. Fuez, European Nuclear Society, P.O. Box 5032, CH-3001 Berne, Switzerland (phone 41-31-21-61-11; fax 41-31-22-92-03).

Meeting of the American Society for Therapeutic Radiology and Oncology, Oct. 3–7, 1994, Philadelphia, Pennsylvania. Contact: ASTRO, 1101 Market St., 14th Floor, Philadelphia, PA 19107-2990 (phone 215-574-3180).

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).

November 1994

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).

March 1995

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.

May 1995

Particle Accelerator Conference, May 1–5, 1995, Dallas, Texas. Contact: Richard Briggs, SSC Laboratory, 2550 Beckleymeade Avenue, Dallas, TX 75237.

DECEMBER 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.

RSIC maintains a microfiche file of the literature entered into SARIS, and duplicate copies of out-of-print reports may be available on request. Naturally, we cannot fill requests for literature which is copyrighted (such as books or journal articles) or whose distribution is restricted.

This literature is on order. It is not in our system. Please order from NTIS or other available source as indicated.

RADIATION SHIELDING LITERATURE

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Parametric Design Study of a Nuclear-Pumped Laser-Driven Inertial Confinement Fusion Power Plant . .

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Transport Operator with Low-Order Spatial Expansion Methods . . Kohut, P. . 12/93

Nucl. Sci. Eng., 115, 348. . Measurements and Calculations of Angular Neutron Flux Spectra from Iron Slabs Bombarded with 14.8-MeV Neutrons . . Yukio Oyama; Kazuaki Kosako; Hiroshi Maekawa. . 12/93. . Corrigendum

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COMPUTER CODES LITERATURE

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DOE/ER/45415-7 FEFF5; XAFS

FEFF5: An Ab Initio Multiple Scattering XAFS Code... . Rehr, J.J.; Zabinski, S.I. . . 1992. . . INIS (mf); OSTI; NTIS. . . USDOE, Washington, DC; Washington University, Seattle, Washington.

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Thorne, D.J.; Patterson, M.R. . . 11/92. . . Oak Ridge National Laboratory, Oak Ridge, Tennessee.

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..... GASPARG; MAXIGASP; POPGASP

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WSRC-TR-92-044 TRIMHX

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