

RSIC Newsletter



Oak Ridge National Laboratory
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The man who gets the most satisfactory results is not always the man with the most brilliant single mind, but rather the man who can best co-ordinate the brains and talents of his associates.—W. Alton Jones

DOE Policy on Software Exchange

Several users have asked about U. S. Department of Energy (US-DOE) policy regarding software dissemination by RSIC. **Developers of software which falls in RSIC's technical scope of radiation transport, radiation protection, radiation shielding, and all related technical aspects should continue to place their code systems and data libraries in our center.**

RSIC is a Specialized Information Analysis Center (SIAC), as defined in the current DOE Order (1360.4A, October 1987) on Scientific and Technical Computer Software (STCS), i.e., **a DOE program-office sponsored facility that collects, evaluates, announces, and provides software in a specialized subject area.** RSIC has DOE sponsorship from Nuclear Energy, Energy Research, Defense Programs, and Civilian Radioactive Waste Management to operate as an SIAC on behalf of their programmatic interests. When the DOE order was revised in October 1987, our sponsors provided input to the review process to assure that RSIC activities as an SIAC were preserved through identification and sanction as part

of the DOE STCS policy.

The Policy section of 1360.4A specifies that technical software developed during work sponsored by DOE or during work carried out for others at DOE facilities shall be made available to the non-DOE community through the National Energy Software Center, or **by an SIAC (such as RSIC)**, as specified in the Order.

In addition, RSIC has acquired software and data packages through sponsorship by the Defense Nuclear Agency, the Nuclear Regulatory Commission, the National Aeronautics and Space Administration, and other public and private national and international agencies and institutions, and is able to continue to serve its technical community by making radiation transport developments in these diverse programs available to all RSIC users. Of course, the cooperation of the user community has been an essential ingredient in the success of RSIC in promoting software sharing and technology transfer. We look forward to continued fruitful collaboration in the future.

R. W. Roussin

RSIC Registration Reminder

As in the October issue of the newsletter, an RSIC User Registration Form is appended to this issue of the newsletter for those who wish to use the services offered by RSIC. Although it is similar to the Periodic Distribution Query we have used in the past to update the distribution list for our monthly newsletter, the form will also be used to update our distribution database with current information about all RSIC users. All users should complete and return this form by *December 1, 1989*. Beginning January 1, 1990, we will require the completed form to be on hand before a request will be honored. If you have sent in the completed form, it is not necessary to do so again.

Because we use the newsletter to publish changes to the computer code and data library collections, all users should have access to it. In the interest of controlling costs, we encourage users, if possible, to share access to the *RSIC Newsletter* so the mailing list can be kept to a manageable size. All users in such a group that share the newsletter should complete and return the form, but only one should check the box

indicating they want to receive the newsletter (see first paragraph of Part I).

The information asked for in Part I gives us a necessary profile of our user community. Our operational efficiency relies on accurate information about addresses, sources of funding, organization types, and project areas. The information requested in Part II will tell us what technology is of interest to the user community and will be used as a guide to our future acquisition activity.

R. W. Roussin

NOTE FROM THE EDITOR: Judging from the responses that have come in since the last newsletter, many of you are cancelling your newsletter subscription. Note that you **MUST** check the appropriate box in the first paragraph of the registration form if you wish to continue receiving the newsletter. For those of you who have returned your form and are not sure whether you will be retained on the newsletter distribution, you may call Sheila Taylor or Alice Rice or send a brief note which contains your subscription number (upper left corner of the label) to confirm your subscription.

CHANGES TO THE COMPUTER CODE COLLECTION

During the month three changes were made to the computer code collection. One new code system was packaged and added to the collection, and two existing code packages were updated or corrected.

CCC-536/DOSFACTOR-DOE

This code system for calculating dose rate conversion factors for external exposure to photons and electrons emitted by radionuclides in the environment, contributed by Oak Ridge National Laboratory (ORNL), has been corrected on recommendation of the developer. DOSFACTOR-DOE results give the dose-equivalent rate per unit concentration for a particular mode of exposure: immersion in a contaminated atmospheric cloud,

immersion in contaminated water, or exposure to contaminated ground surface. Users may request the corrected source or make the following change to the source file. In the argument list for SUBROUTINE BGRND, change the parameter RNGTR to RNGAR. The only changes in the output are in the electron and total dose-rate factors for skin from ground surface exposure. The uninitialized variable RNGTR caused random errors in results. Users must correct the source and regenerate any data files which were generated with the erroneous code. Reference: DOE/EH-0070 (July 1988). FORTRAN IV; IBM 3033.

PSR-171/NJOY89.27

The developers at Los Alamos National Labora-

tory, Los Alamos, New Mexico, have provided updates to this code system for producing pointwise and multigroup neutron and photon cross sections from ENDF/B evaluated nuclear data. The update directives were added to the package as a separate file which can be used to create NJOY89 version 27 using UPEML. Included in the changes are common block modifications and some machine-dependent changes. The modules provided in PSR-171 are the NJOY driver program, RECONR, BROADR, UNRESR, HEATR, THERMR, GROUPE, GAMINR, ERRORR, COVR, MODER, DTFR, CCCCR, MATXSR, ACER, and PLOTR. It is convenient to use an UPDATE-type facility to implement and maintain NJOY89. The machine-independent UPDATE emulator developed at Sandia National Laboratories and packaged in RSIC as PSR-245/UPEML was used for the IBM implementation and is suggested for general use with NJOY89. PSR-171/NJOY89 requesters will also receive PSR-245/UPEML. References: LANL Memo T-2-L-10991 (June 1987), LA-9303-M (ENDF-324), Vol. I (May 1982), Vol. II (May 1982), Vol. III (October 1987), Vol. IV (December 1985), and Informal Notes (July 1989). FORTRAN 77; CDC, CRAY, IBM, VAX.

PSR-275/ORMONTE MICRO

Oak Ridge National Laboratory contributed this uncertainty analysis code system. The code is intended to be linked with FORTRAN-77 models designed by the user and is capable of performing sequential single-variable sensitivity studies, elasticity analyses, and multivariable sensitivity studies (MVSS) by acting as a driver on the user's model. The MVSS function utilizes the Monte Carlo simulation method of probabilistic analysis. The model accessed by the ORMONTE driver code and the names and characteristics of the modeler's uncertain variables are provided by the user. ORMONTE is a bookkeeping code which keeps track of the inputs and outputs defined by the user, samples the user-defined uncertainty distributions, runs the user's model, and produces statistical data and output probability histograms for the output variables of interest to the user. Executable files, produced by the RM FORTRAN Version 2.42 compiler, are included. LOTUS 1-2-3 is required to run the Probability Data Analysis (PDA) routines which convert raw probability data into probability distribution format suitable for input to ORMONTE. With minor modifications ORMONTE runs on VAX, CRAY and IBM mainframes. The package is transmitted on one 5.25-in. DS/DD (360K) diskette. Reference: ORNL/TM-10714 (May 1989). FORTRAN 77; IBM PC.

CHANGE TO THE DATA LIBRARY COLLECTION

During the month an existing data library was corrected.

DLC-144/DOSDAT-DOE

DOSDAT-DOE, contributed by ORNL, was created by running CCC-536/DOSFACTOR-DOE using DLC-80/DRALIST as input. An error discovered in DOSFACTOR-DOE has necessitated the replacement of the data in this package. Users who have the code can make the necessary change as indicated in the announcement above and generate new results. All other users are urged to request the corrected data. The data are the results of a calculation of dose rate conversion factors for external exposure to photons and electrons emit-

ted by radionuclides in the environment. The results give the dose-equivalent rate per unit concentration for a particular mode of exposure: immersion in a contaminated atmospheric cloud, immersion in contaminated water, or exposure to contaminated ground surface. A retrieval program is included to read the data and print it with headings to help identify the fields. The package is available either on tape or 1 DS/DD (360K) diskette. The data on diskette is compressed and requires a hard drive or 1.2MB diskette to decompress the stored files. The retrieval program was compiled with the Ryan-McFarland compiler, Version 2.42. Reference: DOE/EH-0070 (July 1988). FORTRAN 77; Data General MV/family, IBM 3033 (A) and IBM PC (B).

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *Shiaw-Der Su* and *E. T. Cheng*, General Atomics, San

Diego, California; *Enrico Sartori*, OECD Nuclear Energy Agency Data Bank, Gif-sur-Yvette, France; *Elizabeth Selcow*, Brookhaven National Laboratory, Upton, New York; and *Jack Courtney*, Louisiana State University, Baton Rouge.

Calendar

Your attention is directed to the following events of interest.

November 1989

Winter Meeting of the American Nuclear Society, Nov. 26-30, 1989, San Francisco. Contact: Mary J. Keenan, Meetings Manager, ANS, 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 312-352-6611).

Scientific Basis for Nuclear Waste Management, Nov. 27-30, 1989, Boston, Massachusetts, sponsored by the Materials Research Society. Contact: Conferences, MRS, 9800 McKnight Road, Suite 327, Pittsburgh, PA 15237 (phone 412-367-3003).

December 1989

4th International Conference on Fusion Reactor Materials, Dec. 4-8, 1989, Kyoto, Japan. Contact: Prof. S. Ishino, Dept. of Nuclear Engineering, University of Tokyo, Bunkyo-ku, Tokyo 113, Japan.

January 1990

7th Symposium on Space Nuclear Power Systems, Jan. 7-11, 1990, Albuquerque, New Mexico. Contact: Inst. for Space Nuclear Power Studies, 7th Symposium, Chemical & Nuclear Engineering Dept., University of New Mexico, Albuquerque, NM 87131 (phone 505-377-2813, FAX 505-277-0813).

19th International Symposium on Radioactive Isotopes in Clinical Medicine and Research, Jan. 9-12, 1990, Bagastein, Austria. Contact: R. Hofer, Abt. f. Nuklearmedizin, 2. Medizinische Univ. Klinik, Garnisogasse 13, A-1090 Vienna, Austria (phone 0222 4800/2141 or 2142).

Recent Advances in Physics, Jan. 15-19, 1990, Dhaka, Bangladesh. Contact: Dr. M. A. Mannan, P.O. Box 158, Dhaka-1000, Bangladesh (Cable: BANGLATOM; Telex 632203 BATOM BJ; phone 502600).

February 1990

HEART Conference, Feb. 12-16, 1990, Monterey, California. Contact: Thomas A. Tumolillo, Kaman Sciences Corp., P.O. Box 7463, Colorado Springs, CO 80933 (phone 719-599-1718).

WATtec '90 Technical Conference and Exhibition, Feb. 20-23, 1990, Knoxville, Tennessee. Contact: WATtec, P.O. Box 629, Oak Ridge, TN 37831-0629.

Waste Management '90, Feb. 25-Mar. 1, 1990, Tucson, Arizona, sponsored by the University of Arizona and the American Nuclear Society. Contact: Dr. Morton E. Wacks, Dept. NEE, University of Arizona, Tucson, AZ 85721 (phone 602-621-6160).

March 1990

7th Pacific Basin Conference, Mar. 4-8, 1990, San Diego, California, sponsored by the ANS. Contact: ANS Meetings Department, 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 312-352-6611).

International Conference on Supercomputing in Nuclear Applications, Mar. 12-16, 1990, Mito City, Japan, sponsored by JAERI. Contact: Kiyoshi Asai, Computing Center, JAERI, Tokai-mura, Naka-gun, Ibaraki 319-11, Japan (phone 0292(82)5611; Fax 0292(82)6070).

April 1990

26th Annual Meeting of the National Council on Radiation Protection and Measurement, Health and Ecological Implications of Radioactively Contaminated Sites, Apr. 4-5, 1990, Washington, D. C. Contact: NCRP, 7910 Woodmont Ave., Suite 800, Bethesda, MD 20814.

International Conference for High-Level Radioactive Waste Management, April 8-12, 1990, Las Vegas, Nevada. Contact: Dean William Wells, Howard Hughes College of Engineering, UNLV, Las Vegas, NV 89154 (phone 702-739-3699).

3rd International Seminar on Finite Element and Allied Methods in Radiation Transport; Shielding, Reactor Physics and Geophysics Applications, Apr. 19–20, 1990, at the Imperial College of Science, Technology, and Medicine, in London. Contact: Prof. A.J.H. Goddard, Nuclear Power Section, Mechanical Engineering Department, Imperial College, London, SW7 2BX, U.K. (phone 01-589 5111 Ext. 6248/9, Fax 1 823 8845).

Physor '90, Apr. 23–26, 1990, Marseille, France. Contact: Yuri Orechwa, Engineering Physics Division, Bldg. 208, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439 USA.

May 1990

International Symposium on Radiation Protection Infrastructure, May 7–11, 1990, Munich, Fed. Rep. of Germany, sponsored by the IAEA. Contact: Conference Service Section, IAEA, P.O. Box 100, A-1400, Vienna, Austria.

7th Symposium on Radiation Measurements and Applications, May 21–24, 1990, the University of Michigan, Ann Arbor. Contact: Helen Lum, Symposium Secretary, 3034 Phoenix Memorial Laboratory, The University of Michigan, Ann Arbor, MI 48109-2100 (phone 313-764-6214; Fax 313-763-4540).

June 1990

American Nuclear Society Annual Meeting, June 10–15, 1990, Nashville, Tennessee. Contact: Mary Keenan, Meetings Manager, ANS, 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 312-352-6611).

15th Symposium on Effects of Radiation on Materials, June 17–21, 1990, Nashville, Tennessee, sponsored by the American Society for Testing and Materials. Contact: Conferences, ASTM, 1916 Race St., Philadelphia, PA 19103 (phone 215-299-5400).

17th European Conference on Controlled Fusion and Plasma Heating, June 25–29, 1990, Amsterdam, The Netherlands. Contact: F. C. Schuller, FOM-Instituut voor Plasmafysica "Rijhuizen," Postbus 1207, NL-3430 BE Nieuwegein.

July 1990

27th Annual International Nuclear and Space Radiation Effects Conference and Short Course, July 16–20, 1990, Reno, Nevada, sponsored by the Institute of Electrical and Electronics Engineers,

Inc. Contact: Joseph R. Srouer, Northrop Corp., M.S. X400/N5, 2301 West 120th St., P.O. Box 5032, Hawthorne, CA 90251-5032 (phone 213-600-4151).

August 1990

International Topical Meeting on Fast Reactor Safety, Aug. 12–16, 1990, Snowbird, Utah, sponsored by the ANS. Contact: Wayne K. Letho, Argonne National Laboratory, P.O. Box 2528, Idaho Falls, ID 83403-2528 (phone 208-526-7369).

Operational Radiation Protection, Aug. 20–22, 1990, Idaho Falls, Idaho, sponsored by the ANS. Contact: Jack Liebenenthal, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415-3515 (phone 208-526-1252).

7th ASTM-EURATOM Symposium on Reactor Dosimetry, Aug. 27–31, 1990, Strasbourg, France. Contact: G. Tsotridis, Joint Research Centre, Petten Establishment, HFR Div., Postbus 2, NL-1755 ZG, Petten, The Netherlands (phone 02246 5122, Telex REACP NL 57211, Fax 02246 1449) or G. P. Lamaze, National Inst. of Standards and Technology, Bldg. 235, Gaithersburg, MD 20899 USA (phone 301-975-6202, Telex 197 674 NBS UT, Fax 301-921-9847).

September 1990

16th Symposium on Fusion Technology, Sept. 3–7, 1990, London. Contact: JET Joint Undertaking, Conference Office, Abingdon, Oxon, OX14 3EA, United Kingdom.

International Conference on Monte Carlo Methods for Neutron and Photon Transport Calculations, Sept. 25–28, 1990, Budapest, Hungary. Contact: Dr. Lázló Koblinger, Central Research Inst. for Physics, P.O. Box 49, H-1525 Budapest, Hungary.

October 1990

Spectrum '90: Radioactive Waste Technologies, Decontamination, Decommissioning and Hazardous Wastes, Oct. 3–5, 1990, Knoxville, Tennessee, sponsored by ANS. Contact: Thomas H. Row, ORNL, P.O. Box 2008, 4500N MS6198, Oak Ridge, TN 37831-6198 (phone 615-574-5974 or FTS 624-5974).

9th Topical Meeting on Technology of Fusion Energy, Oct. 8–12, 1990, Chicago, sponsored by the American Nuclear Society. Contact: Dr. Charles Baker, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439 (phone 312-972-4836, FTS 972-4836).

OCTOBER 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.

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.

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