



RSIC Newsletter

OAK RIDGE NATIONAL LABORATORY
POST OFFICE BOX X • OAK RIDGE, TENNESSEE 37831
OPERATED BY MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE U.S. DEPARTMENT OF ENERGY

Phone No. 615-674-6176 or FTS 624-6176
Telex No. 8105721076 USDOE OKRE

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*Go forth to seek: the
quarry never found
Is still a fever to
the questing hound,
The skyline is a promise,
not a bound.*

John Masefield

MICROCOMPUTER CODE EXCHANGE

In February 1983, and in a few subsequent newsletter articles, we suggested the sharing of programs developed for microcomputers, for example, desk-top, lap, briefcase, or other personal computers. Since that time we have received very few developed programs, although we have had many requests for microcomputer code packages. We were surprised that there have been so few offered and can only speculate about the reasons. Perhaps the PCs are used mostly as terminals to mainframes. Perhaps the codes developed for PCs are not considered to be generally useful or significant enough to warrant the effort to share them. Perhaps the documentation effort needed to effectively

transfer a program seems inhibiting.

Since early 1983, we have upgraded our TRS-80 to a Model 4, which has a rather standard (MS-type) BASIC, and a CP/M system which can read disks from most CP/M-80 systems. We also have several IBM PCs running PC-DOS. In the last two years, the IBM PC-DOS format has become a *de facto* disk standard, greatly reducing the problem of compatibility.

In an effort to learn how the radiation analysis community is using personal computers, we request that you return the survey form included in this issue of the newsletter. In a subsequent issue we will share the information we collect.

CAUTION: DLC-76/SAILOR DOSIMETRY DATA NOT FOR THERMAL ACTIVATION

The dosimetry reaction cross sections in DLC-76/SAILOR should not be used to calculate thermal neutron activation rates. These dosimetry reaction cross sections are derived by collapsing a 620-group SAND-II formatted version of the ENDF/B-IV dosimetry file to the 47-neutron group structure of SAILOR. The 171-group spectra used for the collapse has less multigroup detail in the thermal range (below 0.1 eV) than the

SAND-II structure. As a result, the collapsing code, in effect, uses flat weighting in the thermal range. The resulting thermal group values are about a factor of two higher for "1/v" cross sections than might be expected if Maxwellian weighting is used. The dosimetry cross sections can be expected to give more reliable reaction rates for threshold reactions. We are grateful to A. Fero and S. Anderson of Westinghouse Nuclear Technology Division for alerting RSIC to this situation.

NOTICE TO MCNP USERS

The September 1984 *RSIC Newsletter* carried a computer codes change note related to an update made to CCC-200/MCNP CDC (A) version and the IBM (B) version. An addendum to this note is in order. The (A) version is a versatile version which runs on the IBM (interactively), VAX, CRAY and CDC hardware. The (B) version is an IBM batch version. Many changes were made to both the (A) and (B) versions. Current users are advised to furnish tapes and request one of the new versions.

CHANGES TO THE COMPUTER CODES COLLECTION

During the month two new code systems were packaged and added to the RSIC collection and an existing code package was corrected.

CCC-203/MORSE-CG

All versions of this general purpose Monte Carlo multigroup neutron and gamma-ray transport code system have been updated to insert one statement immediately before the final "RETURN" statement in Subroutine GOMST. The newly added statement is "ETATH=S." This change is related to albedo problems. In cases where a user is doing a time-dependent problem which has albedo surfaces, the age will not be correct until after this change has been made. The need for this change was called to the attention of RSIC by J. Needham of Harwell, England, and verified by M. B. Emmett of Computing and Telecommunications Division, Oak Ridge National Laboratory. FORTRAN IV; UNIVAC (A), CDC (B), IBM-360 (C), VAX (D), and CRAY (E).

CCC-463/GASPAR

This code system for the evaluation of radiological impacts due to the release of radioactive material to the atmosphere during normal operation of light water reactors is a contribution of the U.S.

Nuclear Regulatory Commission (NRC), Washington, D.C. The code system implements the radiological impact models of NRC Regulatory Guide 1.109, Revision 1, for atmospheric releases. It is currently used by NRC in reactor licensing evaluation to estimate (1) the collective or population dose to the population within a 50-mile radius of the facility, (2) the total collective dose to the U.S. population, and (3) the maximum individual doses at selected locations in the vicinity of the plant. Reference: NUREG-0597. FORTRAN IV; IBM-3033.

PSR-208/POLLA

This code system for converting R-matrix multilevel resonance parameters for fissile nuclei into equivalent Kapur-Peierls parameters is a contribution of Oak Ridge National Laboratory, Oak Ridge, Tennessee. The system uses a multilevel formalism and avoids the diagonalization of the level matrix, hence it is particularly useful where many levels and few fission channels are involved. Reference: ORNL-TM-2599. FORTRAN IV; IBM 3033.

Standards Action

The U.S. Nuclear Regulatory Commission recently issued Guide 3.54, *Spent Fuel Heat Generation in an Independent Spent Fuel Storage Installation*.

Comment by November 30, 1984 is requested for

OP 032-5 *Test and Calibration of Radiation Protection Instrumentation*. The proposed guide endorses

ANSI N323-1978, *Radiation Protection Instrumentation Test and Calibration*.

Comment must be received by the deadline by Secretary of the Commission, Attn: Docketing & Service Branch, U.S. NRC, Washington, DC 20555.

NRC Guides may be obtained from U.S. NRC, Attn: Director, Div. of Technical Information & Document Control, Washington, DC 20555.

PERSONAL ITEMS

In serving a specialized area of scientific endeavor, it seems important that we take note of the movement of people concerned with radiation protection, transport, and shielding in the nuclear industry. We, therefore, continue to carry personal items as they are brought to our attention. During the past month we have been informed of the following changes.

It was with sadness that RSIC received the news that **Zoilo M. Bartolome** of the Philippine Atomic Energy Commission died on July 6, 1984, and that **Saul Levine**, former NRC research director and current NUS staff member, died following a heart attack suffered at Northwestern University, Chicago, where he was a visiting lecturer on nuclear safety.

Donald J. Dudziak, Section Leader for High Technology Systems Studies in the Analysis and Assessment Division (S-4) of Los Alamos National Laboratory, manages the Magnetic Fusion Nucleonics project at LANL, with line management responsibility for TRIDENT-CTR, SENSIT-2D, etc. He writes that his personal research is mainly in the MFE area, but his principal management tasks are for Inertial Confinement Fusion Sys-

tems Studies, mostly short-wavelength laser fusion and heavy-ion fusion. He also manages systems studies for the Lippizan (laser isotope separation) program, for miscellaneous small projects such as commercial laser isotope separation, methane conversion, and potential tritium production hybrids. His section also supports a major LANL classified experiment in Nevada by performing calculational physics analysis. Dudziak states that he has most recently become an "instant expert" on engineering tradeoff studies for SDI systems after being assigned additional management responsibility for this area.

Anthony Chan has joined Princeton Plasma Physics Laboratory, Princeton, New Jersey. He had previously been working at the University of Auckland, New Zealand.

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *Suichi Iwata*, Univ. of Tokyo, Japan; *Michio Morita*, Japan External Trade Organization, Tokyo; *Masuhiko Hanashi*, Japan External Trade Organization, Houston, Texas; *Ryuichi Shingo*, Mitsubishi Heavy Industries, Tokyo; *Mike Moreland*, Presearch, Inc., Oak Ridge, Tenn.; *Maria Gavrilas*, Baltimore Gas & Electric Co., Baltimore; *Jack Courtney*, Louisiana State Univ., Baton Rouge; and *Brian L. Hanson*, USAF, Kirtland AFB, New Mexico.

COURSES, CONFERENCES, SYMPOSIA

RSIC attempts to keep its users/contributors advised of conferences, courses, and symposia in the field of radiation shielding, protection, and transport through this section of the newsletter. Should you be involved in the planning/organization of such conferences, courses, or symposia, feel free to send your announcements and calls for papers to RSIC.

REAC/TS Offers Radiation-Accident Courses

The Radiation Emergency Assistance Center/Training Site (REAC/TS) in Oak Ridge, Tennessee, will be conducting several courses in the handling of radiation accidents. A brief description of the courses follows. Details may be obtained from Robert C. Hicks, Ph.D., Director, REAC/TS, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3131).

Medical Planning and Care in Radiation Accidents is offered March 4-8 and August 19-23, 1985. The one-

week course is designed for health care officials who may be called upon to provide first aid or medical care in the event of a radiation accident. Lectures and equipment demonstrations will be used to present the fundamentals of radiation and radiobiology, radiation detection and measurement, care of radioactively contaminated injuries, evaluation and treatment of internal radioactive contamination, and the acute radiation syndromes.

Health Physics in Radiation Accidents is scheduled for January 14-18 and September 23-27, 1985. It is designed for health physicists who may be called upon to respond to accidents involving radioactive materials and personnel injury. The course includes a review of radiation physics, principles of radiation detection and internal dosimetry, protective clothing and equipment, radiological emergency procedures, and the role of the health physicist in a medical environment. Lectures will be supplemented by demonstrations, laboratory exercises, and a simulated radiation accident drill.

Handling of Radiation Accidents by Emergency Personnel is a 3½-day course which will be offered Febru-

ary 13-16, March 12-15, May 6-10, and September 9-13, 1985. The course is directed to 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 radiation accident victim. Discussions include the fundamentals of radiation, detection and measurement, prevention of the spread of contamination, reduction of radiation dose to the victim and attending personnel, and the role of the medical physicist in caring for contaminated accident victims.

Calendar

Your attention is directed to the following additional events of interest to the radiation shielding and protection community.

November 1984

International Conference on Power Plant Simulation, November 19-21, 1984, Cuernavaca, Mexico, sponsored by the Instituto de Investigaciones Eléctricas, Mexico, with the sponsorship of the Nuclear Regulatory Commission (NRC). Contact: for USA and Canada; David Hetrick, Dept. of Nuclear and Energy Engineering, Univ. of Arizona, Tucson, AZ 85721; and for other countries, Dra. elia Méndez, Instituto de Investigaciones Eléctricas, Depto. de Simulación, Leibnitz 14, 3er piso, Co. Anzures, 11590, Mexico, D. F.

International Symposium on Assessment of Radioactive Contamination in Man, November 19-23, 1984, Paris, sponsored by the International Atomic Energy Agency. Contact: Conf. Svc. Sect., IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Conference on Radioactive Waste Management, November 27-29, 1984, London, sponsored by the British Nuclear Energy Society. Contact: The Secretariat, British Nuclear Energy Society, at the Institution of Civil Engineers, 1-7 Great George St., London SW1P 3AA, UK.

December 1984

1st International Conference on Fusion Reactor Materials (ICFRM-1), December 3-6, 1984, Tokyo, sponsored by Atomic Energy Society of Japan, Iron and Steel Institute of Japan, Japan Institute of Metals, Japan Society of Applied Physics, the American Nuclear Society, and others. Contact: R. R. Hasiguti, The Science University of Tokyo, Faculty of Engineering, Kagurazaka, Shinjuku-ku, Tokyo 162, Japan.

Executive Conference: There Are Dollars and Sense in Good Radiation Protection Management, December 9-12, 1984, San Diego, California, sponsored by the American Nuclear Society. Contact: Carl Giesler, General Chairman, Wisconsin Public Service Co., 700 N. Adams, Box 1200, Green Bay, WI 54305 (phone 414-433-1306) or W. C. Hopkins, Technical Program Chairman, Bechtel Power, 15740 Shady Grove Rd., Gaithersburg, MD 20760 (phone 301-258-3000).

January 1985

Environmental Radiation, (18th Mid-Year Topical Meeting of the Health Physics Society), January 6-10, 1985, Colorado Springs, Colorado. Contact: R. J. Burk, Jr., Health Physics Society, 4720 Montgomery Lane, Suite 506, Bethesda, MD 20014.

International Symposium on Radioactivity, January 8-12, 1985, Pune, India, to commemorate the 50th anniversary of the discovery of artificial radioactivity. Contact: H. J. Arnkar, Convenor, ISR, Chemistry Dept., Univ. of Poona, Pune 411 007, India.

2nd Symposium on Space Nuclear Power Systems, January 14-16, 1985, Albuquerque, New Mexico. Contact: Mohamed S. El-Genk, 2nd Symp. Space Nuclear Power Systems, Chem/Nucl. Engr. Dept., FEC 239, Univ. of New Mexico Campus, Albuquerque, NM 87131.

Radiological Protection Measurements and Their Traceability, meeting and exhibition, January 22, 1985, London, sponsored by the Society for Radiological Protection. Contact: J. H. Martin, Dept. of Medical Biophysics, Blackness Lab., Univ. of Dundee, Dundee DD1 4HN, Scotland, UK.

February 1985

International ANS/ENS Topical on Probabilistic Safety Methods and Applications, February 24-28, 1985, San Francisco. Contact: Chauncey Starr, EPRI, 3412 Hillview Ave., Palo Alto, CA 94303 (phone 415-855-2121).

March 1985

6th Topical Meeting on the Technology of Fusion Energy, March 3-7, 1985, San Francisco. Contact: Carl Henning, Lawrence Livermore National Laboratory, P.O. Box 5511, L-644, Livermore, CA 94550 (phone 415-846-7195).

17th International Symposium on Radiation Protection Physics, March 12-15, 1985, Dresden, German Dem. Rep. Contact: K. Hübner, Tech. Univ. Dresden, Physics Sect., Div. of Radiation Protection Physics, Mommsenstrasse 13, DDR-8027 Dresden, German Dem. Rep.

Symposium on Radioactive Waste Management '85, March 24-28, 1985, Tucson, Arizona, sponsored by Univ. of Arizona, U.S.-DOE, ANS, Electric Power Research Institute, American Society of Mechanical Engineers. Abstract deadline is September 20, 1984. Contact: Roy G. Post, General Chairman, Waste Management 85, College of Engineering, Univ. of Arizona, Tucson, AZ 85721.

Annual Meeting of the Atomic Energy Society of Japan, March 28-30, 1985, Tokyo. Contact: Minoru Masamoto, Secretary General, Atomic Energy Society of Japan, No. 1-1-13 Shimbashi, Minato-ku, Tokyo 105 Japan.

April 1985

21st Annual Meeting of the National Council on Radiation Protection and Measurements, April 3-4, 1985, Washington, DC. Contact: NCRP, 7910 Woodmont Ave., Suite 1016, Bethesda, MD 20814 USA.

International Meeting on Advances in Nuclear Engineering and Computational Methods, April 9-11, 1985, Knoxville, Tennessee, sponsored by ANS, European Nuclear Society (ENS), Atomic Energy Society of Japan. Contact: H. L. Dodds, c/o Univ. of Tennessee, Nuclear Engr. Dept., Knoxville, TN 37996 or R. M. Westfall, ORNL, P.O. Box X, Oak Ridge, TN 37831 (phone 615-574-5267).

Fast Reactor Safety, April 21-24, 1985, Knoxville, Tennessee, sponsored by the ANS, ENS. Contact: George Flanagan, Oak Ridge National Laboratory, P.O. Box X, Bldg. 6025, Oak Ridge, TN 37831 (phone 615-574-6155).

Workshop on Neutron Therapy: Low Dose Rate and Beam Radiation Therapy, April 24-27, 1985, Lexington, Kentucky.

Contact: Yosh Maruyama, Dept. of Radiation Medicine, Univ. of Kentucky, Lexington, KY 40536-0084 USA.

General Meeting of the American Physical Society, April 25-27, 1985, Washington. Contact: The American Physical Society, 335 East 45th St., New York, NY 10017.

Tritium Technology in Fission, Fusion and Isotopic Applications, April 30-May 2, 1985, Dayton, Ohio, sponsored by the ANS and the Canadian Nuclear Society. Contact: H. F. Anderson, Process Engr. Eval. & Control, Monsanto Mound Facility, P.O. Box 32, Miamisburg, OH 45342 (phone 513-865-4020).

May 1985

International Conference on Nuclear Data for Basic and Applied Science, May 13-17, 1985, Santa Fe, New Mexico. Contact Phillip G. Young, Mail Stop B243, Los Alamos National Laboratory, Los Alamos, NM 87545 USA (phone 505-667-7670).

Telecommunications & Networking...Supplying the missing link, May 19-22, 1985, Fort Lauderdale, Florida, sponsored by the American Society for Information Science. Contact: Lawrence A. Woods, Technical Program Committee Chairman, 221 Memorial Library, Univ. of Notre Dame, Notre Dame, IN 46556.

6th Symposium on X- and Gamma-Ray Sources and Applications, May 21-23, 1985, Ann Arbor, Michigan. Contact: Martin A. Ludington, Dept. of Physics, Albion College, Albion, MI 49224 USA.

June 1985

25th Annual International Conf. of the Canadian Nuclear Association and 6th Annual Conf. of the Canadian Nuclear Society, June 2-5, 1985, Ottawa, Ontario, Canada. Contact: J. A. Weller, General Manager, Canadian Nuclear Association,

111 Elizabeth St., 11th Floor, Toronto, Ontario, Canada M5G 1P7.

Annual Meeting of the American Nuclear Society, June 9-14, 1985, Boston, Massachusetts. Contact: David G. Pettenigill, ANS Meeting Manager, American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60535.

22nd Annual Conference on Nuclear and Space Radiation Effects, July 21-24, 1985. Contact: Kenneth F. Galloway, B344 Tech, National Bureau of Standards, Washington, DC 20234 USA.

August 1985

Australian Radiation Protection Society Annual Meeting, August 19-21, 1985, Melbourne, Victoria, Australia. Contact: T. H. Gan, Australian Radiation Laboratory, Lower Plenty Road, Yallambie, Victoria 3085, Australia.

SMIRT-8, August 19-23, 1985, Brussels, Belgium. Contact: Sergio Finzi, CEC - Directorate Gen., X11-JRC, Brussels, Belgium.

International Seminar on Containment of Nuclear Reactors, August 26-27, 1985, Brussels, Belgium. Contact: Rolf Krieg, Inst. für Reaktorentwicklung, Kernforschungszentrum, Karlsruhe GmbH, Postfach 3640, D-7500 Karlsruhe 1, F. R. Germany or Algirdas H. Marchertas, Reactor Analysis and Safety Div., Argonne National Laboratory, Argonne, IL 60439 USA.

October 1985

Symposium on Organ Dosimetry for External Gamma and Neutron Radiations, October 22-24, 1985, Knoxville, Tenn., sponsored by the Oak Ridge National Laboratory. Contact: R. O. Chester, ORNL, P.O. Box X, Oak Ridge, TN 37831 (phone 615-574-2102, FTS 624-2102).

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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Personal Computer Survey

I have access to a personal computer yes___ no___

I regularly use a personal computer for

communications_____ as a terminal_____

scientific/engineering calculations_____ text processing_____

data base management_____

other (specify)_____

Type of system: manufacturer_____ model_____

operating system_____

Programming language_____

Type of disk drive (e.g., 5.25 in. SSDS)_____

I would like to obtain programs to _____

I have one or more programs that I might share. These perform the following function:

Comments:

Please return to:

Radiation Shielding Information Center

Oak Ridge National Laboratory

P.O. Box X

Oak Ridge, TN 37831