RSIC Newsletter

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(For RSIC TELEX Communication Only)

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I wonder why it is that we are not kinder to each other than we are.
How much the world needs it! How easily it is done!—
Henry Drummond

7th ICRS ABSTRACT DEADLINE PUSHED BACK

We have been informed by the 7th ICRS conference organizers that the deadline for the submission of abstracts has been changed to **January 15, 1988**. The November issue of the newsletter reported the due date as December 15, 1987. RSIC now has available copies of the Call for Papers and will provide copies upon request.

Pertinent deadlines now stand as follows:

- January 15, 1988; Form B and abstracts reach Secretariat
- February 11–12, 1988; Programme Committee selects papers
- February/March 1988; Notification of acceptance of papers
- May 15, 1988; Submission of Form A through official channels
- June 30, 1988; Form A with Conference fee reaches Winfrith (latest)
- July 30, 1988; Camera-ready text reaches Winfrith (latest)

The item for May 15, 1988, "Submission of Form A through official channels," is necessary because the conference is sponsored by OECD. We have been informed that for U.S. citizens this requirement can be met by sending the form to RSIC. We will collect and forward them to the proper party. In this regard, RSIC is acting as an agent for the U.S. representatives on the OECD Nuclear Energy Agency Committee on Reactor Physics. They are Phil Hemmig (DOE), Leo LeSage (Argonne National Laboratory), and Fred Maienschein (ORNL).

CCC-467/ITS USER NOTE

As reported in the November 1987 *RSIC Newsletter*, the CCC-467/ITS 2.0 code package requires the use of PSR-245/UPEML 2.0 for implementation and maintenance. Future requesters of ITS 2.0 will also receive a copy of UPEML 2.0. RSIC has now provided a copy of UPEML 2.0 to all who got ITS 2.0 before the release of PSR-245.

CHANGES TO THE COMPUTER CODE COLLECTION

Six changes were made to the computer code collection during the month. The documentation was updated for two existing code packages, two code packages were replaced with newly-frozen versions, and two code packages were updated to improve or correct performance. One change resulted from a foreign contribution.

CCC-202/PELSHIE3

A newly-frozen version of this general purpose kernel integration shielding code system for point and extended gamma-ray sources was contributed by the Atomic Energy Corporation of South Africa, LTD, Pretoria, Republic of South Africa. The current versions in RSIC are CCC-202A/PELSHIE3, for IBM hardware, and CCC-202B/PELSHIE2, for CDC hardware. The latter was incorporated into RSIC in 1983 and does not have the more extensive data sets available in PELSHIE3 which calculates dose rates from gamma-emitting sources with different source geometries and shielding configurations. Eight source geometries are provided and are called by means of geometry index numbers. Gamma-emission characteristics for 134 isotopes, attenuation coefficients for 57 elements or shielding materials, and Berger build-up parameters for 17 shielding materials are provided in data libraries. References: PEL 290 (November 1986) and PEL 258 (October 1979). FORTRAN IV; MVS/VS2 operating system, IBM System/370 (A); NOS1, CDC (B).

CCC-476/CAAC

The documentation for this code system for implementation of the atmospheric dispersion assessment required by the 1984 Clean Air Act was updated with the addition of a User's Guide for AIRDOS and PREPAR that is applicable to both the IBM and VAX versions. The document was provided by the contributor of the VAX version, J. G. Darst, Westinghouse Materials Company of Ohio, P.O. Box 398704, Cincinnati, Ohio 45239. Feedback or corrections to this User's Guide can be provided to the author or RSIC. References: ORNL-5532 (1979), ORNL-5692 (1981), and ORNL-5952 (1984) and informal notes. FORTRAN IV; IBM-3033(A) and FORTRAN 77; VAX(B).

CCC-503/MARINRAD

This marine radionuclide transport and dose systems model for assessing the consequences of the release of radioactive material into oceans was updated by Sandia National Laboratories, Albuquerque, New Mexico. Full 132-column output from the MARRAD part of the package is now provided. A nuclide inventory file based on an ORIGEN calculation was also added for use in the MARRAD run. The documentation was also updated to describe two additional options for calculating the source term. MARINRAD consists of three computer programs: MARRAD, MAROUT and, optionally, ORIGEN. Reference: SAND83-7104. FORTRAN 77; CDC CYBER 170/855, NOS 2.

CCC-504/PRESTO-II

The documentation for this code system for low-level waste environmental transport and risk assessment was updated by Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee. Informal notes describing the modifications for VAX/VMS FORTRAN 77 implementation are now provided in the documentation. Included in the package are PRESTO-PREP, a data preprocessor for PRESTO-II, RADFMT a data file converter, and RADRISK.BCD, a 1981 version of dose and risk factors for radionuclides written by CCC-422/RADRISK for use with the DARTAB subroutine of PRESTO-II. References: ORNL-5970 (April 1986), ORNL-5981 (July 1984), and Informal Notes (August 1987). FORTRAN 66; IBM 3033. PRESTO-PREP runs on PDP-10.

CCC-514/ANISN/PC

A minor correction was made to this multigroup

one-dimensional discrete ordinates transport code system with anisotropic scattering by the contributor, EG&G Idaho, Inc., Idaho Falls, Idaho. The problem would occur only in cases which have more than one group of upscatter and which "punch" out cross sections in ISOTXS format to the ANISNC4.PUN file. The effect of the bug is that the punched cross sections are in error. As a convenience to those who already have CCC-514/ANISN/PC, requests may be made to obtain the updated files rather than the entire package. The updated portion will fit on one dual-sided, high-density diskette (1.2M capacity) or two dual-sided, double-density diskettes (360K capacity).

Some corrections have also been made to the document to clarify input parameters, definitions, and options.

The minimum hardware requirements for ANISN/PC are: an IBM PC or compatible, the 8087 math coprocessor chip, a 10MB fixed disk, and 640K Random Access Memory. The Ryan McFarland IBM Professional Fortran compiler Version 1.0 was used to compile the programs under PC/DOS 3.1. The PLINK86-Plus Version 1.48 overlay linker was used to create an executable ANISN file of approximately 640K bytes. The PC/DOS Version 3.1 linker was used to link the APE32 and LMOD programs. The executable files are included. Reference: EGG-2500 (April 1987). FORTRAN 77, IBM PC. Six dual-sided, dual-density diskettes are needed to transmit the entire package in DOS BACKUP/RESTORE format.

PSR-171/NJOY87

A newly-frozen version of this code system for producing pointwise and multigroup neutron and photon cross sections from ENDF/B evaluated nuclear data was provided by Los Alamos National Laboratory, Los Alamos, New Mexico. NJOY87 is a substantial upgrade of the previous release, NJOY(6-83). It includes photon production and photon interaction capabilities, heating calculations, covariance processing, and thermal scattering capabilities. It is capable of processing data in ENDF-4, ENDF-5, and ENDF-6 formats for evaluated data (to the extent that the latter have been frozen at the time of this release). For this release the code was changed from a CDC "overlay" structure to a "segment" type structure that is more compatible with IBM and CRAY. All modules are now "subroutines," and no OVERLAY or CALL OVERLAY statements are used. The modules provided in PSR-171 are the NJOY driver program, RECONR, BROADR, UNRESR, HEATR, THERMR, GROUPR, GAMINR, ERRORR, COVR, MODER, DTFR, CCCCR, MATXSR, ACER, and PLOTR. It is convenient to use an UPDATE-type facility to implement and maintain NJOY87. **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 NJOY87. PSR-171/NJOY87 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 (November 1987). FORTRAN 77; CDC, CRAY, IBM, VAX.

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.

Jackson Hole Conference Call for Papers

Summaries for the **1988 International Reactor Physics Conference** are due February 26, 1988. The conference will be held September 18–21, 1988, in Jackson Hole, Wyoming, and is sponsored by the Idaho Section and Reactor Physics Division of the American Nu-

clear Society (ANS). Summaries of 500–1500 words are solicited for the following topics:

- **Adanced Reactor Design** to include Light Water Reactors (LWR), High Temperature Graphite Reactors (HTGR), Liquid Metal Reactors (LMR), High Conversion Reactors, Process Heat Reactors, District Heating Reactors, Thorium High Temperature Reactors (THTR), Heavy Water Reactors (HWR), Modular, Actinide Burners, and Advanced LWR fuels.
- **Research Reactor Physics** to include Reduced enrichment, Physics tests/utilization, New facility design, Advanced neutron source, Boron doping of microchips, and NBS new code neutron source.
- **Physics of Space Reactors** to include SP-100 and Multimegawatt.
- **Applications of Modern Reactor Physics Methods** to include Microcomputer applications, Engineering workstations and operator aids, Effect of new computers, Advances in Monte Carlo analysis, Advances in multidimensional transport codes, Advances in nodal methods, New code systems, Comparisons for specific applications, Power flattening, Fuel management, and Coupled thermal hydraulics/ neutronics.
- **Physics of Fuel Cycle**.
- **Physics of Nuclear Criticality Safety**.
- **Reactor Instrumentation** to include In-core devices.
- **Reactor Theory**.
- **Comparison of Calculations and Measurements** to include Thermal systems, Fast systems, Spatial kinetics, Power reactor Doppler, and International programs.
- **Cross Sections/Resonance Theory** to include ENDF-VI (U.S. library), JEF (European library), JENDL (Japanese library), Soviet and Chinese files, Delayed neutron data, and Recent evaluations.
- **Application of Integral and Differential Data** to include Data adjustment and bias methods and Sensitivity theory.
- **Startup & Operating Experience** to include SUPERPHENIX, SNR-300, THTR, and PFR.
- **Physics of Safety** to include Reactivity coefficients and Chernobyl update.
- **Coupled Core/Shield Physics Problems** to include Radiation induced embrittlement, Boron neutron capture therapy (BNTC), and Instrumentation.
- **Any other current reactor physics topic.**

The summary should include an opening statement clearly stating what the work is, not less than 500 but not more than 1500 words (tables and figures count as 150 words each), a closing statement describing the significance of the work, proper reference to all closely related material, and they must contain enough detail and substance so that an evaluation can be made without the necessity of referring to other sources. Summaries must be postmarked by **Febuary 26, 1988**, and sent air mail or express to: H. F. McFarlane, Technical Program Chairman, P.O. Box 2528, Idaho Falls, ID 83403-2528 USA (phone 208-526-7371; Telefax 208-526-7151 verify -7061).

BRC Radwaste Disposal Short Course Offered

The College of Engineering at the University of Texas at Austin is offering a short course on "Below Regulatory Concern (BRC) Radwaste Disposal," February 1–5, 1988, at Austin.

Participants completing the course will be able to determine the radiological health impacts of disposing of short-lived radionuclide waste in sanitary landfills. The methodology of the Nuclear Regulatory Commission code system IMPACTS–BRC, as implemented on the IBM-PC, and the Environmental Protection Agency code system PATHRAE will be emphasized in determining what level of activity is below regulatory concern. Modifications in these computational procedures developed at the University of Texas-Austin and the Texas Low-Level Radioactive Waste Disposal Authority will be covered using the BRC rule in Texas.

Early enrollment is encouraged because the number of participants is limited. The $695 fee covers all educational material and break-time refreshments. Registration information may be requested from Continuing Engineering Studies, College of Engineering, Ernest Cockrell Hall 10.324, The University of Texas at Austin, Austin, TX 78712 (514-471-3506). Questions concerning course content should be addressed to Dr. Ledbetter (phone 512-471-4730).

ORAU Offers Professional Training Programs

Oak Ridge Associated Universities is offering several training courses during the coming year. A brief description of the courses follows. More comprehensive information and registration forms may be obtained by writ-

ing to Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576; FTS 626-3576; 800-362-5555).

Applied Health Physics is an intensive five-week laboratory-oriented course designed to provide training in the principles of radiation protection. The course includes lectures, laboratory exercises, and tours of nuclear facilities. The course is offered April 11–May 13, 1988, and September 12–October 14, 1988.

Radiopharmaceutical Internal Dose Calculation Techniques is a three-day course on the principles, terminology, and available resource material applicable to the Medical Internal Radiation Dosimetry (MIRD) technique of calculating internal radiation dose. The course is offered April 25–27, 1988.

Air Sampling for Radioactive Materials is a one-week laboratory-oriented course which introduces the basic theory and mechanics of air sampling for radionuclides. The course is offered June 13–17, 1988.

Internal Dosimetry for Fixed Nuclear Facilities is a one-week lecture course designed to teach the newer techniques for calculating the radiation dose from internally deposited radionuclides. The course will stress the use of the MIRD and ICRP30 techniques for dose assessment of plant personnel and members of the general population for routine work environment and releases. It is offered June 27–July 1, 1988.

Gamma Spectroscopy is a one-week laboratory-oriented course which introduces the basics of radionuclide identification and quantification by gamma spectroscopy. Lecture and laboratory exercises will cover sodium iodide and high purity germanium detectors, multichannel analyzers (threshold settings, pole-zero adjustments, etc.), energy calibrations, efficiency calibrations for a variety of geometries, peak stripping and deconvolutions, and computer-assisted spectral analysis. The course is offered August 29–September 2, 1988.

Calendar

Your attention is directed to the following additional events of interest.

February 1988

Waste Management '88: Symposium on Radioactive Waste Management, Feb. 26–Mar. 3, 1988, Tucson, Arizona, sponsored by the University of Arizona. Contact: M. Wacks, Dept. of Nuclear and Energy Engineering, University of Arizona, Tucson, AZ 85721 (phone 602-621-2475).

March 1988

24th Annual Meeting of the National Council on Radiation Protection and Measurements, Mar. 30–31, 1988, Washington, D.C. The principal session is "Radon." Contact: NCRP, 7910 Woodmont Ave., Suite 1016, Bethesda, MD 20814.

April 1988

Workshop on Non-ionising Radiation Biological Effects, Protection and Standards, Apr. 5–8, 1988, Melbourne, Australia. Contact: J. C. Button, Scientific Secretary, IRPA 7, Health and Safety Div., Australian Atomic Energy Commission, Private Mail Bag, Sutherland, NSW 2232 Australia.

Seventh International Congress of the International Radiation Protection Association (IRPA 7), Apr. 10–17, 1988, Sydney, Australia. Contact: J.C.E. Button, Scientific Secretary, IRPA 7, Health & Safety Div., Australian Atomic Energy Commission, Private Mail Bag, Sutherland, N.S.W. 2232, Australia (phone 61-2-543-3295) (Telex: AA.24562).

International Symposium on Fusion Nuclear Technology, Apr. 10–19, 1988, Tokyo. Contact: Kenzo Miya, Nuclear Engineering Research Lab., University of Tokyo, Tokai-mura, Ibaraki Prefecture, 319-1 Japan (phone 011-813-812-211 ext 7421) or Mohamed Abdou, University of California-Los Angeles (phone 213-206-1228).

International Conference on Radiation Protection Principles in Nuclear Energy, Apr. 18–22, 1988, Sydney, Australia, sponsored by the IAEA. Contact: W. Porter, IE-13, U.S. Dept. of Energy, Forrestal, Washington, DC 20585 (phone 202-252-4573).

May 1988

Safety of Next Generation Power Reactors, May 1–6, 1988, Seattle, Washington, sponsored by the ANS Reactor Physics, Reactor Operations, Human Factors, and Fuel Cycle and Waste Management Divisions, and the U.S. DOE. Contact: Robert Ferguson, Ferguson & Assoc., 7601 W. Clearwater, Suite 450, Kennewick, WA 99336 (phone 509-783-1446).

3rd Topical Meeting on Tritium Technology in Fission, Fusion, and Isotopic Applications, May 1–6, 1988, Toronto, Canada, sponsored by the Canadian Nuclear Society and the American Nuclear Society. Contact: C. D. Burnham, CFFTP, 2700 Lakeshore Road, West, Mississauga, Ontario, Canada, L5J 1X3 (phone 416-823-6364) or Harold Anderson, Monsanto Research Corp., P.O. Box 32, Miamisburg, OH 45342 (phone 513-865-3062).

International Symposium on the Management of Low and Intermediate Level Radioactive Wastes, May 16–20, 1988, Stockholm, Sweden, sponsored by the International Atomic Energy Agency. Contact: Conference Service Section, IAEA, P.O. Box 100, A-1400 Vienna, Austria.

International Conference on Nuclear Data for Science and Technology, May 30–June 3, 1988, Mito, Japan, sponsored by the Japan Atomic Energy Research Institute. Contact: Sin-iti Igarasi, Conference Secretariat, Nuclear Data Center, JAERI, Tokai-mura, Naka-gun, Ibaraki-ken 319-11 Japan (phone 0292-82-5480).

June 1988

International Conference on Computational Physics (ICCP), June 1–5, 1988, Beijing, sponsored by the Institute of Applied Physics and Mathematics, Beijing, and Drexel University, Pennsylvania. Contact: Zhang Tianyuan, IAPCM, P.O. Box 8009, Beijing, China (PRC) or D. H. Feng, Department of Physics and Atmospheric Science, Drexel University, Philadelphia, PA 19104 USA.

American Nuclear Society Annual Meeting, June 12–17, 1988, San Diego, California. Contact: ANS, Meetings Dept., 555 North Kensington Ave., La Grange Park, IL 60525 (phone 312-352-6611).

September 1988

Industrial Radiation and Radioisotope Measurement Applications, Sept. 6–8, 1988, Pinehurst, North Carolina, a topical meeting sponsored by the Isotopes and Radiation Division of the ANS. Contact: Robin P. Gardner, General Chairman, or Kuruvilla Verghese, Tech. Program Chairman, North Carolina State Univ., School of Engineering, Box 7909, Raleigh, NC 27695-7909.

International Topical Meeting on Waste Management, Sept. 11-15, 1988, Pasco, Washington. Contact: Bill Bonner, Pacific Northwest Laboratory, P.O. Box 999, Richland, WA 99352 (phone 509-376-5451 or FTS 444-5451).

11th International CODATA Conference, "Scientific and Technical Data in a New Era," Sept. 26–29, 1988, Karlsruhe, Fed. Rep. of Germany. Contact: DECHEMA, ATTN: CODATA Conference, P.O. Box 97 01 46, D-6000 Frankfurt/M. 97, Fed. Rep. of Germany (phone 069 7564 241/242/243; Telex: 412490 dcha d.).

October 1988

4th International Symposium on Radiation Physics (ISRP-4), Oct. 3–7, 1988, São Paulo, Brazil. Contact: Prof. Ivan Cunha Nascimento, ISRP-4 Chairman of the Organizing Committee, Inst. de Fisica-Universidade de São Paulo, Caixa Postal 20516 (TELEX: 011-37920 IF SP -1498-São Paulo-SP-Brazil).

5th National Conference on Biomedical Physics and Engineering, Oct. 15–17, 1988, Sofia, Bulgaria. Contact: M. Markov, Department of Biophysics, Biological Faculty, Sofia University, 8, Dragan Tzankov Blvd., Sofia 1000, Bulgaria.

NOVEMBER 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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