RSIC Newsletter

No. 292   March 1989

Leadership is action, not position.—Donald H. McGannon

CHANGES TO THE COMPUTER CODE COLLECTION

During the month four changes were made to the computer code collection. One new code system was added to the collection, an existing code package was replaced with a newly frozen version, one package was extended with an additional hardware version, and a code package document was updated. One change resulted from a foreign contribution.

CCC-200/MCNP 3B

A newly frozen version of this general purpose Monte Carlo neutron and gamma-ray transport code system was provided by the developer, Los Alamos National Laboratory, Los Alamos, New Mexico. This edition, MCNP Version 3B, introduces several additions to the code. A repeated structure capability has been introduced. A modified version of the MCPLOT code has been incorporated. Biasing the spectrum of neutron-induced photons to emphasize a subset of the entire photon energy spectrum is now possible. Special treatments of tallies can be effected using the new FT card. The SSW, FU, and WWN cards have had their forms redefined and broadened. Other modifications include provision of a FORTLIB capability, modifications to the PLOT overlay, and improved error messages. Three 2400-foot reels of magnetic tape written at 1600 bpi or one 2400-foot reel written at 6250 bpi are required to hold the entire package. References: LA-7396-M, Rev. 2 (September 1986), MCNP 3B Newsletter (July 1988) and informal notes. FORTRAN 77; CDC 7600, CRAY 1, IBM 3033, VAX 11.

CCC-459/BOLD VENTURE IV

This microcomputer version of the BOLD VENTURE IV package for reactor analysis is a subset of the IBM mainframe version. The programs were modified at the University of Cincinnati in Ohio and funded by the Department of Energy via the Idaho National Engineering Laboratory. Included are the control module, input processors, a cross-section processor, the VENTURE neutronics code, and an exposure module which utilizes the BURNER code for depletion calculations. VENTURE solves neutronics eigenvalue, adjoint, fixed source, and criticality search problems using diffusion theory. It treats up to three dimensions, maps power density, and does first order perturbation analysis at the macroscopic cross section level. BURNER solves the nuclide chain equations to estimate the nuclide concentrations at the end of an exposure time, and after a shutdown period. The PC version requires 640K memory, a math co-processor and about four megabytes of disk storage. The executable file was created under DOS 3.1 using the Lahey FORTRAN 77 compiler (Version 2.22) and PLINK86 Plus multilevel linker from Phoenix Software. Five DS/HD (1.2MB) diskettes are required for transmittal. Reference: Informal documentation, Univ. of Cincinnati (1988). FORTRAN 66; IBM 3033 (A) and FORTRAN 66 and 77; IBM PC (B).

PSR-206/TRANSX-CTR

The documentation for this code package developed under CTSS on CRAY computers was updated to include modifications required to install the system on a CRAY X-MP/48 running UNICOS. The information was contributed by Knolls Atomic Power Laboratory, Schenectady, New York. TRANSX-CTR, originally contributed by Los Alamos National Laboratory, reads MATXS libraries and produces transport tables for use with discrete-ordinates (Sn) and diffusion codes. The ability to prepare coupled tables and response edits for heating, damage, gas production, and delayed activity makes TRANSX-CTR especially useful for fusion reactor studies. References: LA-9863-MS (1984) and unpublished notes (1989). FORTRAN 77; CRAY, CDC, IBM, VAX.

PSR-271/MILER

This computer code, contributed by the ENEA in Bologna, Italy, through the Nuclear Energy Agency Data Bank, Gif-sur-Yevtte, France, produces an AMPX master library interface from the NJOY/THEMIS intermediate multigroup cross section library in GENDF format. MILER translates neutron group cross sections, gamma-ray production group cross sections and photon interaction cross sections. The object library can be read by the standard AMPX-II utility modules to merge, collapse, check, and edit. The BONAMI module can be used for producing problem dependent sets for the AMPX system. References: ENEA Informal documentation (1987). FORTRAN 77; IBM 3090.

PERSONAL ITEM

In serving a specialized area of scientific endeavor, it seems important that we note significant changes in the activities 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.

Jess Greenborg, principal author of the ISOSHLD code, has joined the staff of Shonka Research Associates, Inc., in Marietta, Georgia.

Peter Hague has been appointed Head of Criticality Section at Safety and Reliability Consultants Ltd., Cheshire WA1 4AT, U.K. He was formerly with the United Kingdom Atomic Energy Authority.

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *Patrick C. Rose*, General Research Corp., Santa Barbara, California; *Richard Seymour* and *Jerry Cox*, EG&G ORTEC, Oak Ridge, Tennessee; and *N. M. Moghari*, Control Data Corp., Rockville, Maryland.

Standards Notes

The following document is available from International Organization for Standardization, Case Postale 56, CH-1211, Geneva 20 Switzerland, or from the ANSI, 1430 Broadway, New York, NY 10018, in the United States.

ISO 8963: 1988, *Dosimetry of X and γ Reference Radiations for Radiation Protection over the Energy Range from 8 keV to 1.3 MeV.*

The following standards were reaffirmed on March 3, 1989:

ANSI/ANS-19.1-1983(R1989), *Nuclear Data Sets for Reactor Design Calculations,*

ANSI/ANS-19.3-1983(R1989), *The Determination of Neutron Reaction Rate Distributions and Reactivity of Nuclear Reactors,*

ANSI/ANS-19.3.4-1983(R1989), *The Determination of Thermal Energy Deposition Rates in Nuclear Reactors,* and

ANSI/ANS-19.4-1983(R1989), *A Guide for Acquisition and Documentation of Reference Power Reactor Physics Measurements for Nuclear Analysis Verification.*

Calendar

Your attention is directed to the following events of interest.

April 1989

25th Annual Meeting of the National Council on Radiation Protection and Measurements, Apr. 5–6, 1989, in Washington, D.C. Contact: W. Roger Ney, Executive Director, NCRP, 7910 Woodmont Ave., Suite 800, Bethesda, MD 20814.

Advances in Nuclear Engineering Computation and Radiation Shielding, Apr. 9–13, 1989, Santa Fe, New Mexico, a topical meeting sponsored by the ANS M&C and RP&S Divisions. Contact: E. W. Larsen, Technical Program Chairman, Group X-6, MS B226, Los Alamos National Laboratory, Los Alamos, NM 87545 USA (phone 313-936-0124).

Nuclear Criticality Technology and Safety Conference, Apr. 10–14, 1989, sponsored by Oak Ridge National Laboratory. Contact: C. M. Hopper, ORNL, P.O. Box 2008, MS6370, Oak Ridge, TN 37831-6370 (phone 615-576-8617 or FTS 626-8617).

Radioactive Materials Transportation Workshop, Apr. 10–13, 1989, Oakland, California. Contact: Teresa Yearwood, SAIC, P.O. Box 2501, Oak Ridge, TN 37831 (phone 615-482-9031 ext. 403).

7th International Meeting on Radiation Processing, Apr. 23–28, 1989, Leeuwenhorst Congres Center, Noordwijkerhout, The Netherlands, a biennial conference dedicated to the dissemination and advancement of the technology of industrial radiation processing. Contact: E. Franken, 7th Internatl. Meeting on Radiation Processing, P.O. Box 4240, 6710 EE Ede, The Netherlands (phone AA 31 8380 37476; Telex 37030; FAX AA 31 8380 39643).

Fifty Years With Nuclear Fission, Apr. 26–28, 1989, Gaithersburg, Maryland, sponsored by the ANS and the U.S. National Institute of Standards and Technology. Contact: Jan Hauber, Room B109, Bldg. 245, NIST, Gaithersburg, MD 20899.

International Symposium on Pressure Vessel Technology and Nuclear Codes and Standards, Apr. 26–28, 1989, Seoul, D.P.R. Korea. Contact: Dr. H. H. Chung, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439.

10th Annual Meeting of the Canadian Radiation Protection Association, Apr. 30–May 3, 1989, in Victoria, British Columbia. Contact: Lutz E. Moritz, TRIUMF, 4004 Wesbrook Mall, Vancouver, B. C., Canada V6T 2A3 (phone 604-222-1047; Telex (0)-4508503; FAX 604-222-1047).

May 1989

Spring Meeting of the American Physical Society, May 1–4, 1989, Baltimore, Maryland. Contact: Conferences, APS, 335 East 45th Street, New York, NY 10017 (phone 212-682-7341).

International Conference on Radioactive Waste Management, May 2–5, 1989, Brighton, U.K. Contact: Secretariat, British Nuclear Energy Society, 1-7 Great George Street, Westminster, London SW1P 3AA UK (phone 01-222-77 22).

Radioactive Materials Transportation Workshop, May 8–11, 1989, Albuquerque, New Mexico. Contact: Teresa Yearwood, SAIC, P.O. Box 2501, Oak Ridge, TN 37831 (phone 615-482-9031 ext. 403).

Annual Meeting on Nuclear Technology, May 9–11, 1989, Dusseldorf, F. R. Germany. Contact: Deutsches Atomforum e.V., Conference Office JK 89, Heussallee 10, D-5300 Bonn 1, FRG (49-228-507223).

3rd World Conference on Neutron Radiography, May 14–18, 1989, Osaka, Japan. Contact: Research Reactor Institute, Kyoto University, Kumatori-cho, Osaka 590-04, Japan.

Seminar on Fission Product Transport Processes in Reactor Accidents, May 22–26, 1989, Dubrovnik, Yugoslavia. Contact: J. T. Rogers, Department of Mechanical and Aeronautical Engineering, Carleton University, Ottawa, Ontario K1S 5B6, Canada (phone 613-564-2787).

June 1989

29th Annual Conference of the Canadian Nuclear Association and the 10th Annual Conference of the Canadian Nuclear Society, June 4–7, 1989, Toronto, Canada. Contact: Canadian Nuclear Association, 111 Elizabeth Street, Toronto, Ontario M5G 1P7 Canada.

Annual Meeting of the American Nuclear Society, June 4–8, 1989, Atlanta, Georgia. Contact: ANS Meetings Dept., 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 312-352-6611).

4th International Symposium on Radiation Protection—Theory and Practice, June 4–9, 1989, Malvern, England.

Parallel Processing with Personal Computers, June 5–9, 1989, a course sponsored by the Joint Research Centre, Ispra Establishment. Contact: Secretariat "ISPRA-Courses", Centro Comune di Ricerca, I-

21020 ISPRA (Varese) ITALY (phone 0332-789819/789839/781128).

Packaging and Transportation of Radioactive Materials: PATRAM '89, June 11–16, 1989, Arlington, Virginia, sponsored by US-DOE. Contact: Larry Blalock, Chairman, US Organizing Comm., US Dept. of Energy, P.O. Box 2001, Oak Ridge, TN 37831-8765 (phone 615-576-0945 or FTS 626-0945).

Advanced Seminar on Selected Topics in Radiation Protection, June 12–16, 1989, in Lisbon, Portugal, a course sponsored by the Joint Research Centre, Ispra Establishment. Contact: Secretariat "ISPRA-Courses", Centro Comune di Ricerca, I-21020 ISPRA (Varese) ITALY (phone 0332-789819/789839/781128).

July 1989

Radioactive Material Transportation Workshop, July 17–20, 1989, Idaho Falls, Idaho. Contact: Teresa Yearwood, SAIC, P.O. Box 2501, Oak Ridge, TN 37831 (phone 615-482-9031 ext. 403).

26th IEEE Annual Conference on Nuclear and Space Radiation Effects, July 24–28, 1989, Marco Island, Florida. Contact: Dante M. Tasca, General Electric Co., Room M1211, Bldg. 100, P.O. Box 8555, Philadelphia, PA 19101 (phone 215-354-4132).

Radioactive Material Transportation Workshop, July 31–Aug. 3, 1989, Kennewick, Washington. Contact: Teresa Yearwood, SAIC, P.O. Box 2501, Oak Ridge, TN 37831 (phone 615-482-9031 ext. 403).

August 1989

International Nuclear Physics Conference, Aug. 20–26, 1989, São Paulo, Brazil, sponsored by the International Union of Pure and Applied Physics. Contact: Universidade de São Paulo, Departamento de Fisica Nuclear, Caixo Postal 20516, 01498 São Paulo, SP, Brazil.

September 1989

International Workshop on New Developments in Occupational Dose Control and ALARA Implementation at Nuclear Power Plants and Similar Facilities, Sept. 18–21, 1989, Brookhaven National Laboratory, Upton, New York. Contact: Dr. John W. Baum, BNL ALARA Center, Bldg. 703M, Upton, NY 11973 (phone 516-282-4214).

October 1989

First International Conference on Radioactive Nuclear Beams, Oct. 16–18, 1989, Berkeley, California,

sponsored by the U.S. Dept. of Energy. Contact: J. M. Nitschke, Nuclear Science Division, Lawrence Berkeley Laboratory, 1 Cyclotron Road, Berkeley, CA 94720 (phone 415-486-6471).

November 1989

Selected Topics of Monte Carlo Applications in Science and Technology, Nov. 6–10, 1989, a course sponsored by the Joint Research Centre, Ispra Establishment. Contact: Secretariat "ISPRA-Courses", Centro Comune di Ricerca, I-21020 ISPRA (Varese) ITALY (phone 0332-789819/789839/781128).

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.

April 1990

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).

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).

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

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 Liebenthal, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415-3515 (phone 208-526-1253).

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).

FEBRUARY 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.

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