RSIC Newsletter

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> There are two great classes of men: the people and the scholars, the men of science.
> For the former, nothing exists but that which directly leads to action. It is for the latter to
> see beyond. They are the free artists who create the future and its history, the conscious
> architects of the world.) Fichte

CHANGES TO THE COMPUTER CODE COLLECTION

Six changes were made to the computer code collection. Two code systems were packaged and added to the collection, two existing code packages were extended with additional hardware versions, and two code packages were enhanced with document or software updates.

CCC-371/ORIGEN2

The PC version (D) of this package for isotope generation and depletion was enhanced with the addition of libraries contributed by NUKEM GmbH, Alzenau, Federal Republic of Germany. ORIGEN2 is a computer code system for calculating the buildup, decay, and processing of radioactive materials which uses a matrix exponential method to solve a large system of coupled, linear, first-order ordinary differential equations with constant coefficients. The activation product libraries were downloaded and reformatted from the CCC-371A mainframe version. The programs which reformatted the libraries for use in the PC version are also included. This version runs on an IBM PC/AT 286 or compatible under versions of DOS prior to release 4. The new libraries are included on one DS/HD (1.2 MB) diskette. Two DS/HD diskettes are required for transmittal of the entire package.

The CCC-371 package was extended to include a new hardware version (E) contributed by Battelle Columbus, Columbus, Ohio. This new PC 386 and PC 486 version requires at least 4 MB of extended memory and about 6 MB of hard disk and a math coprocessor. It was compiled and linked with the Lahey F77L-EM/32 extended memory Fortran compiler version 4.00 and the Lahey/Ergo OS/386 extended memory operating system version 2.1.05 under DOS 3.3. This version is functionally equivalent to version (A) for mainframe computers. All libraries from Version A have been included. Three DS/HD 5.25-inch diskettes (1.2 MB) are required for transmittal. References: ORNL/TM-7175 (July 1980), *Nuclear Technology* 62:335 (September 1983), and Informal Notes (December 1985, January 1985, October 1981). Fortran; IBM 360/370, CDC, VAX and Cray (A), UNIVAC 1100 (B), PRIME 400 (C), IBM PC (D), and PC 386/486 (E).

CCC-546/MACCS

A new hardware version of this code system for calculation of reactor accident consequences was contributed by ORNL. The new version runs on an IBM RS/6000 using Fortran 77 and C compilers under the AIX operating system. MACCS was developed at Sandia National Laboratories, Albuquerque, New Mexico, to simulate the impact of severe accidents at nuclear power plants on the surrounding environment. The principal phenomena considered in MACCS are atmospheric transport, mitigative actions based on dose projection, dose accumulation by a number of pathways including food and water ingestion, early and latent health effects, and economic costs. MACCS can be used for a variety of applications including probabilistic risk assessment (PRA) of nuclear power plants and other nuclear facilities, sensitivity studies to gain a better understanding of the parameters important to PRA, and cost benefit analysis. This workstation version is transmitted on two DS/HD (1.2 MB) diskettes. Reference: Sandia letter (2/14/91), NUREG/CR-4691, SAND86-1562 Vol. 1, 2, and 3 (February 1990). Fortran 77; VAX (A), IBM RS/6000 (B).

CCC-577/ALDOSE

The documentation for ALDOSE has been updated to include a software review reprinted from *Health Physics*, 60(4), 581! 585 (April 1991). ALDOSE calculates the absorbed dose rate, dose-rate equivalent rate, and dose-weighted LET as functions of depth in water irradiated by a uniform alpha disk source. In addition, the average LET and average quality factor for the irradiated water are computed. ALDOSE runs on the IBM PC and compatibles with a math coprocessor. The code was written in Fortran and compiled and linked on the IBM PC with Microsoft Version 5.0. ALDOSE is transmitted on one DS/DD 5.25-inch diskette. Reference: ORNL/TM-11618, *Health Physics*, 60(4), 581! 585 (April 1991). Fortran 77, VAX family, Data General MV family, IBM PC, IBM PC/XT, IBM PC/AT.

CCC-588/MORSE-EMP

Experimental and Mathematical Physics Consultants, Gaithersburg, Maryland, has implemented this general purpose Monte Carlo multigroup neutron and gamma-ray transport code system on personal computers. Source and executable files are included for MORSE-EMP, PICTURE and JUNEBUG II. Seven executable versions of MORSE are included. Five were compiled under DOS with Microsoft Fortran Version 5.0 using overlays and will run on any PC with 640K of memory. Two alternate implementations are included. One compiled with the Lahey F77-EM/32 compiler will run only on a PC 386 with an 80387 math coprocessor and at least 4 MB of memory. The other uses Microsoft Fortran and runs under OS/2. A graphics monitor is required for the JUNEBUG program. The package is transmitted on 9 DS/HD 5.25-inch diskettes (1.2 MB). This package was converted from CCC-474C/MORSE-CGA, Version 1, originally released by ORNL in 1985. The ORNL developer plans to release Version 2 later this year. References: Informal Notes (September 1990), ORNL-6174, ORNL-4972, NUREG/CR-0200 Rev. 2, ORNL/TM-9355 (August 1985). Fortran 77; IBM PC.

PSR-307/LPROBIT

The University of Pittsburgh, Pennsylvania, contributed this code system for log-probability analysis. LPROBIT performs log-probability analyses and computes collective and average doses missed due to the minimum detectable dose problem. It can be used for general lognormal analysis and for analysis of occupational dose distributions. LPROBIT runs on IBM PCs and compatibles and the IBM PS/2 Model 50. It is written in Microsoft BASIC 4.5. One DS/DD 5.25-inch diskette is required for transmittal. References: Informal Notes (March 1989), *Health Physics*, 51(4), 437! 445 (October 1986). BASIC; IBM PC and IBM PS/2.

PERSONAL ITEMS

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.

YOU'RE INVITED
To **DAVID K. TRUBEY'S**
Retirement Roast
Thursday, June 27, 1991, 2 PM

in the Upstairs Conference Room of Bldg. 6010 at Oak Ridge National Laboratory, Oak Ridge, Tennessee.

If you would like to send a commemorative letter, comments or any anecdotes about Dave you would like to share, send them to Alice Rice at the address on the newsletter masthead. These will be included in a notebook to be presented to Dave at the party. If you would like to ``Roast'' Dave, notify Bob Roussin. You may contact us by phone at 615-574-6176 or FAX at 615-574-9619.

RSVP

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *Victor V. Bolyatko*, Moscow Engineering Physics Institute, USSR; and *Robert L. Sanders,* TVA, Knoxville, Tennessee.

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.

SCALE Seminar Sponsored by NEA Data Bank

The OECD Nuclear Energy Agency Data Bank (NEA-DB) is sponsoring a SCALE Workshop to be held in Saclay, France, September, 17! 20, 1991, following the International Conference on Criticality Safety (ICNC '91) in Oxford. The seminar will focus on discussion of SCALE and related systems, concentrating on data processing capabilities, criticality, and shielding.

The meeting is intended for expert users of SCALE and related systems and experts in the evaluation of nuclear fuel facilities and package design. A preliminary list of presentations follows.

! Historical Review of SCALE Development (C. V. Parks)

! New Features in SCALE-4 (+ SCALE-4.1 Unix version) (C. V. Parks, L. M. Petrie, M. Brady, and B. Broadhead)

! OFFSCALE, an Interactive, Menu-Driven Utility for Preparing Input to SCALE (C. V. Parks)

! Preparation of Data Libraries (Conversion of old AMPX Master-New AMPX Master Format) (L. M. Petrie and B. Broadhead)

! NSLINK (NJOY-SCALE Linker) (P. de Leege)

! Perturbation Version of the Monte Carlo Module KENO-EUR and its Graphical Display (H. Rief)

! PASC-3 and UNIPASC (B. Pijlgroms)

! The SCALE-ROLAIDS Sequence SYRGUS (W. Weber)

! Applications I: Criticality) Burn-up Credit (M. Brady)

! Applications II: Shipping Cask Shielding (B. Broadhead)

! Chernobyl Reactivity Accident Simulation with SCALE (P. Landeyro)

! Vectorization of SCALE Modules

! Information Presentations of User's Experience and Development

! User Query Session (Collected before the meeting)

Participants are invited to submit an abstract of one page to published in the proceedings of the seminar along with a participation form by **June 25, 1991**.

The only cost associated with the seminar is food and lodging. Additional information about the seminar may be obtained from Enrico Sartori, Secretariat, OECD/NEA Data Bank, Bat. 445, F-91191 Gif-sur-Yvette Cedex, France. Participants from the U.S. may contact C. V. Parks, ORNL, P.O. Box 2008, Oak Ridge, TN 37831-6370 (phone 615-574-5280).

Calendar

Your attention is directed to the following events of interest.

July 1991

2d International Symposium on Biophysical Aspects of Auger Processes, July 5! 6, 1991, University of Massachusetts, Amherst, Massachusetts, sponsored by the American Association of Physicists in Medicine. Contact: Roger W. Howell, Dept. of Radiology, Div. of Radiation Research, M.S.B. F-451, Univ. of Medicine & Dentistry of NJ, 185 South Orange Ave., Newark, NJ 07103 USA (phone 201-456-5067).

28th Annual International Nuclear and Space Radiation Effects Conference and Short Course, July 15! 19, 1991, San Diego, sponsored by the Institute of Electrical and Electronics Engineers, Inc. Contact: Ronald L. Pease, Mission Research Corp., 1720 Randolph Rd., SE, Albuquerque, NM 87106 (phone 505-768-7639).

Management and Disposal of Radioactive Wastes, July 15! 19, 1991, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact:

Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-3515; Fax 617-432-1969).

Health Physics Society Annual Meeting, July 21! 26, 1991, Washington, D.C. Contact: Nancy E. Newman, NIH Bldg. 21, Rm. 236, 9000 Rockville Pike, Bethesda, MD 20892 (phone 301-496-5774).

International Illinois Low Level Radioactive Waste (LLWM) Symposium: The Quiet Revolution)Innovations in Low-Level Waste Management, July 29! Aug. 1, 1991, Chicago, Illinois, sponsored by the Illinois Dept. of Nuclear Safety. Contact: Ms. P. Burnett, Illinois Dept. of Nucl. Safety, 1035 Outer Park Drive, Springfield, IL 62704 USA.

August 1991

Internal Dosimetry for Fixed Nuclear Facilities, Aug. 5! 9, 1991, in Oak Ridge, Tennessee, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576).

Occupational and Environmental Radiation Protection, Aug. 12! 16, 1991, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-3515; Fax 617-432-1969).

Computational Methods in Reactor Analysis, Aug. 12! 16, 1991, Knoxville, Tennessee, a University of Tennessee short course held during Tennessee Industries Week. Contact: T. W. Kerlin, Head of the Dept. of Nuclear Engineering, University of Tennessee, Knoxville, TN 37996 (phone 615-974-2525).

Monte Carlo Analysis, Aug. 12! 16, 1991, Knoxville, Tennessee, a University of Tennessee short course held during Tennessee Industries Week. Contact: T. W. Kerlin, Head of the Dept. of Nuclear Engineering, University of Tennessee, Knoxville, TN 37996 (phone 615-974-2525).

Environmental Monitoring for Radioactivity, Aug. 26! 30, 1991, in Oak Ridge, Tennessee, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576).

In-Place Filter Testing Workshop, Aug. 26! 30, 1991, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-3515; Fax 617-432-1969).

September 1991

Risk Assessment In Occupational and Environmental Health, Sept. 4! 6, 1991, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-3515; Fax 617-432-1969).

Radiopharmaceutical Internal Dose Calculation Techniques, Sept. 9! 11, 1991, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar, Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576).

ICNC '91, Sept. 9! 13, 1991, Christ Church, Oxford, England, sponsored by AEA Technology, the OECD Nuclear Energy Agency, with cooperation from IAEA. Contact: John Bentley, 062/A32, AEA Technology Winfrith, Dorchester, Dorset DT2 8DH, England (phone 0305 203316; Fax 0305 202122).

Applied Health Physics, Sept. 9! Oct. 11, 1991, a short course sponsored by Oak Ridge Associated Universities. Contact: Registrar, Professional Training Programs, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3576).

INEL Computing Symposium, Sept. 10! 12, 1991, Idaho Falls, Idaho, sponsored by the Idaho National Engineering Laboratory. Contact: Teri Williams, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415-2602 (phone 208-526-9728, FTS 583-9728).

Brazilian Meeting on Reactor Physics and Thermal Hydraulics, Sept. 17! 20, 1991, São Paulo, Brazil. Contact: José Rubens Maiorino, IPEN-CNEN/SP, Caixa Postal 11049 (Pinheiros), 05499-São Paulo-SP-Brazil (phone 011 211-6011 Ext. 270; Telex 11 83592-IPEN-BR).

October 1991

7th Symposium on Neutron Dosimetry, Oct. 14! 18, 1991, Berlin, Fed. Rep. of Germany, sponsored by the Commission of the European Communities. Contact: Dr. R. Jarh, Physikalisch-Technische Bundesanstalt,

Abt. 7, Bundesallee 100, 3300 Braunschweig, FRG.

1991 Joint International Waste Management Conference, Oct.
21! 26, 1991, Seoul, Korea. Contact: Mr. Larry C.
Oyen, Sargent & Lundy, 55 East Monroe St., Chicago,
IL 60603 (phone 312-269-6750, Fax 312-269-3475,
Telex 280603).

November 1991
Nuclear Energy Forum, Nov. 10! 13, 1991, San Francisco,
California. Contact: Conference Office, U.S. Council for
Energy Awareness, 1776 I Street, N. W., Suite 400,
Washington, DC 20006-2495 USA.

International Conference on Fusion Reactor Materials, Nov.
17! 22, 1991, Clearwater, Florida. Contact: P. J.
Maziasz, Metals and Ceramics Division, Oak Ridge
National Laboratory, P.O. Box 2008, Oak Ridge, TN
37831-6376.

March 1992
Radiation Transport Calculations Using EGS4, Mar. 9! 12,
1992, a four-day, 80386 microcomputer-based course to
be held in Seattle, Washington, sponsored by Inst. of
Applied Physics and Medicine. Contact: Susan Walker,
IAPM, 701 16th Ave., Seattle, WA 98122 (phone 206-
553-7330).

April 1992
New Horizons in Radiation Protection and Shielding, Apr.
26! May 1, 1992, Pasco, Washington, a topical meeting
of the ANS Radiation Protection and Shielding Division.
Contact: Wilbur Bunch, HO-36, Westinghouse Hanford
Co., P.O. Box 1970, Richland, WA 99352 (phone 509-

376-6313).

May 1992
*8th International Radiation Protection Association
Conference*, May 17! 22, 1992, Montreal, Canada.
Contact: G. Webb, NRPB, IRPA 8 Secretariat, Chilton,
Didcot, Oxon OX11 ORQ, United Kingdom.

June 1992
American Nuclear Society Annual Meeting, June 7! 12, 1991,
Boston, Massachusetts. Contact: Mary Keenan, ANS,
555 N. Kensington Ave., La Grange Park, IL 60525
(phone 708-352-6611).

10th Topical Meeting on Technology of Fusion Energy, June
7! 12, 1992, Boston, Massachusetts, sponsored by the
American Nuclear Society and the U.S. Department of
Energy. Contact: Stephen O. Dean, Fusion Power
Associates, 2 Professional Drive, Suite 248,
Gaithersburg, MD 20879 (phone 301-258-0545).

July 1992
15th International Conference on High Energy Accelerators,
July 20! 24, 1992, Hamburg, Fed. Rep. of Germany.
Contact: F. Willeke, Deutsches Elektronen-Synchrotron,
Notkestrasse 85, 2000 Hamburg 52, FRG.

August 1992
Nuclear Technologies for Space Exploration, Aug. 14! 17,
1992, Jackson Hole, Wyoming. Contact: Dr. David
Woodall, INEL EG&G Idaho, P.O. Box 1625, Idaho
Falls, ID 83415-2516.

MAY 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.

RADIATION SHIELDING LITERATURE

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1990. . UNIPUB. . ISBN 92-0-125290-0, 274 pp.
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