



# RSIC Newsletter

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**Oak Ridge National Laboratory**  
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*Undertake something that is difficult; it will do you good. Unless you try to do something beyond what you have already mastered, you will never grow.—Ronald E. Osborn*

## CHANGES TO THE COMPUTER CODE COLLECTION

Two changes were made to the computer code collection during the month. a new code system was packaged and added to the collection and an existing code package was replaced with a newly frozen version. One change resulted from a foreign contribution.

### PSR-199/HEATING 7.2

Oak Ridge National Laboratory contributed a newly frozen version of this code system for multidimensional, finite-difference heat conduction analysis. This package, designated HEATING 7.2f, solves steady-state and/or transient heat conduction problems in one-, two-, or three-dimensional Cartesian, cylindrical, or spherical coordinates. Changes to the previous version (HEATING 7.2b) supplied to RSIC consist of additional error checking of the input, improvements in error messages, and refinement of some of the output. None of the changes impact the solutions obtained. The package is available for either UNIX workstations or personal computers. The automated UNIX installation procedure has been extended to include two additional platforms (DEC ALPHA and HP workstations.) The PC version is compiled with a newer version (4.2.1) of the Microway NDP Fortran-386 compiler that creates .EXE files. The new .EXE files include the DOS extender. The previous version of the compiler created .LTL files that required a separate DOS-extender executable in order to run. A 386- or 486-based personal computer equipped with at least 4 MB of memory and a math coprocessor is the minimum configuration for the PC version. The UNIX version is available on a

3.5-in. disk in tar format; the PC version is transmitted on a 3.5-in. (1.44 MB) DS/HD disk in self-extracting compressed DOS files. Reference: ORNL/TM-12262 (Nov. 1992). Fortran and C; UNIX (P00199ALLWS02); PC (P00199PC38602).

### PSR-338/DWBA91

The Service de Physique Theorique, CEA Saclay, Gif-sur-Yvette, France, and the Theoretische Kernphysik, Universität Hamburg, Germany, through the NEA Data Bank, Issy-les-Moulineaux, contributed this code system for nuclear model calculations. DWBA91 computes the inelastic scattering of nucleons on a target of which the excited state is described microscopically by particle-hole configurations, with a two-body interaction. DWBA91-Interaction is included to generate input data for DWBA91 for the two-body interaction for a given energy based on the energy and density dependent effective interaction table. The codes are written in Fortran IV and run on Vax, IBM, Cray, and CDC computers. The code package is transmitted on one DS/HD 3.5-in. (1.44 MB) diskette in self-extracting compressed DOS files. References: Informal reports (1991 and 1992). Fortran IV; VAX, Cray, IBM (P00338/MNYCP/00).

## CHANGE TO THE DATA LIBRARY COLLECTION

An existing data library was improved with the addition of an enhanced retrieval routine.

### **DLC-088/TPASGAM-85**

Oak Ridge National Laboratory has enhanced this package with the addition of another retrieval program for use with this radioactive decay library of gamma-ray energies, branching ratios, and cross sections. The new Fortran program SEARCH.FOR performs searches for records in the nuclide-ordered

data library. It can be linked with additional sub-programs to perform calculations required for user's applications. The code package is transmitted on one DS/HD 3.5-in. (1.44 MB) diskette in self-extracting compressed DOS files. References: Informal notes (1985). Fortran; Vax and IBM (D00088ALLCP04).

## 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.

### **Fusion Power Associates Honors ORNL Staff Members**

Three ORNL staff members were honored at the annual meeting and symposium held in Oak Ridge by Fusion Power Associates. Retiring Deputy Director **Murray Rosenthal** was awarded the Distinguished Career Award for his lifelong contributions that have directly or indirectly benefited fusion research. **John Sheffield**, director of the Fusion Energy Division, received the 1993 Leadership Award for his "efforts to focus the fusion program toward its ultimate goal of fusion power." **John Galombos** of the Computing Applications Division received the Excellence in Fusion Engineering Award for his contributions to the development and application of the TETRA systems code used in fusion device designs.

### **Roussin to be Named Fellow of the American Nuclear Society**

**Bob Roussin** has been selected to become a Fellow of the American Nuclear Society based on his outstanding contributions and leadership in the field of radiation shielding. Specifically, Bob has achieved world-wide recognition in the development of nuclear data for radiation transport analysis by virtue of his leadership in the production of the VITAMIN-series of multigroup libraries and his prominent positions within the Cross Section Evaluation Working Group (CSEWG). He is also widely recognized for his directorship and management of the Radiation Shielding Information Center. Bob will be awarded this honor at the upcoming ANS Winter Meeting in San Francisco. Congratulations Bob!!

### **Garner Joins RSIC Staff**

**Dan Garner**, most recently a member of the Oak Ridge Electron Linear Accelerator (ORELA) operating team at Oak Ridge National Laboratory, has joined the RSIC staff as a computing technician. He is filling the vacancy created by the retirement of **Carol Coker**. Dan attended the State Technical Institute at Memphis, Tennessee, where he received an Associate degree in electrical engineering.

### **Visitor to RSIC**

During the month the following person came for an orientation visit and/or to use RSIC facilities: *J. C. Courtney*, Louisiana State University, Baton Rouge.

## Calendar

### January 1994

*11th Symposium on Space Nuclear Power Systems*, Jan. 9–13, 1994, Albuquerque, New Mexico. Contact: Richard Johnson, Inst. of Space Nuclear Power Studies, University of New Mexico, Chemical and Nuclear Engineering Dept., Albuquerque, NM 87131-1341.

*Effluent and Environmental Monitoring*, Jan. 10–14, 1994, Denver, Colorado. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440; fax 203-738-9322).

*Health Physics for Uranium Users*, Jan. 17–21, 1994, Salt Lake City, Utah. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440; fax 203-738-9322).

*Reactor Physics and Reactor Computations*, Jan. 23–26, 1994, Tel Aviv, sponsored by the Israel Nuclear Society and the European Nuclear Society. Contact: Dan Knassim Ltd., P.O. Box 57005, Tel Aviv 61570, Israel (phone 972-3-562-6470, Fax 972-3-561-2303).

*Improving HP Audits and Appraisals*, Jan. 24–26, 1994, San Diego, California. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440; fax 203-738-9322).

*How to Write Effective Health Physics Procedures*, Jan. 24–26, 1994, San Diego, California. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440; fax 203-738-9322).

*Measurement and Detection of Radiation*, Jan. 31–Feb. 4, 1994, Orlando, Florida. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

### February 1994

*Managing Radioactive and Mixed Waste*, Feb. 13–17, 1994, Albany, New York, sponsored by the Health Physics Society. Contact: John M Matusek, NENYHPS, P.O. Box 2249, Empire State Plaza Station, Albany, NY 12220-2249.

*1992 HEART Conference*, Feb. 14–18, 1994, Monterey, California. Contact: Logicon/RDA, ATTN: 1994 HEART Conference, Mr. Ed. Quinn, 2100 Washington Blvd., Arlington, VA 22204-5706.

*Principles of Health Physics (C.H.P. Park I Exam Study)*, Feb. 27–Mar. 4, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

### March 1994

*Internal Dosimetry*, Mar. 14–18, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

*The Nuclear Fuel Cycle*, Mar. 14–18, 1994, a short course sponsored by Continuing Education, University of Missouri-Rolla, 103 Mechanical Engineering Annex, Rolla, MO 65402-0249 (phone 314-341-4200, fax 314-341-60610).

*11th International Conference on the Use of Computers in Radiotherapy*, Mar. 20–24, 1994, Manchester, United Kingdom. Contact: J. M. Wilkinson, Christie Hospital, Withington, Manchester M20 9BX, GB.

### April 1994

*30th Annual Meeting of the National Council on Radiation Protection and Measurements*, Apr. 6–7, 1994, Arlington, Virginia. Contact: National Council on Radiation Protection and Measurements, 7910 Woodmont Ave., Suite 800, Bethesda, MD 30814-3095 (phone 301-657-2652).

*Methods and Applications of Radioanalytical Chemistry (MARC III)*, Apr. 10–16, 1994, Kona, Hawaii, an International Topical Conference of the American Nuclear Society. Contact Prof. Roy H. Filby, Technical Program Chairman, Department of Chemistry, Washington State University, Pullman, WA 99164-4630 (phone 509-335-3331, fax 509-335-8867).

*Topical Meeting on Advances in Reactor Physics*, Apr. 11–14, 1994, Knoxville, Tennessee, sponsored by the American Nuclear Society. Contact: B. A. Worley, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6363 USA (phone 615-574-6106).

*High Performance Computing '94: Grand Challenges in Computer Simulation*, Apr. 11–15, 1994, La Jolla, California, sponsored by the Society for Computer Simulation. Contact: Dr. Adrian Tetner, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439 (phone 708-252-8454).

*ARS '94, International Meeting on Advanced Reactor Safety*, Apr. 17–20, 1994, Pittsburgh, Pennsylvania. Contact: D. Squarer, Westinghouse Electric Corp., Science and Technology Center, 1310 Beulah Road, Pittsburgh, PA 15235-5098 USA (phone 412-256-2063; fax 412-256-1348).

*8th International Conference on Radiation Shielding*, Apr. 24–27, 1994, Arlington, Texas, sponsored by the American Nuclear Society with cooperation from several international and professional societies. Contact: Dr. R. M. Rubin, TU Electric, 400 N. Olive St., LB81 24 SLIC, Dallas, TX 75201, or Nolan Hertel, Georgia Tech, Atlanta, Georgia 30332-0405 USA. R. W. Roussin is the International Liaison.

*RECOD '94, 4th International Conference on Nuclear Fuel Reprocessing and Waste Management*, Apr. 24–28, 1994, London. Contact: W. L. Wilkinson, RECOD '94 Steering Committee, British Nuclear Forum, 22 Buckingham Gate, London SW1E 6LB, United Kingdom. (phone 071-828-0116; fax 071-828-0110).

*42nd Annual Meeting of the Radiation Research Society*, Apr. 25–29, 1994, Nashville, Tennessee. Contact: Radiation Research Society, 1891 Preston White Drive, Reston, VA 22091.

#### **May 1994**

*9th Pacific Basin Nuclear Conference*, May 1–5, 1994, Sydney, Australia. Contact: Australian Nuclear Association, P.O. Box 445, Sutherland, NSW 2232, Australia.

*Advanced Health Physics (C.H.P. Part 2 Exam Study)*, May 1–6, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

*International Workshop on Implementation of ALARA at Nuclear Power Plants*, May 8–11, 1994, Long Island, New York. Contact: Dr. John W. Baum or Dr. T. A. Khan, Brookhaven National Laboratory, ALARA Center, Upton, Long Island, NY 11973 USA (phone 516-282-3228, Fax 516-282-5810).

*International Conference on Nuclear Data for Science and Technology*, May 9–13, 1994, Gatlinburg, Tennessee, USA. Contact: J. K. Dickens, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6356 USA (phone 615-574-6115).

*1994 Symposium on Radiation Measurements and Applications*, May 16–19, 1994, Ann Arbor, Michigan, the 8th in a series sponsored by the U.S. Department of Energy. Contact: Helen Lum, Symposium Secretary, 3034 Phoenix Memorial Laboratory, The University of Michigan, Ann Arbor, MI 48109-2100.

*Radioactive Materials Transport and Radwaste Disposal*, May 16–20, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

#### **June 1994**

*Radiation Safety Officer Training*, June 13–17, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

#### **July 1994**

*Environmental Health Physics*, July 11–15, 1994. Contact: Woodson Assoc., Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751, Fax 301-990-6153).

*18th International Radiation Physics Society*, July 18–22, 1994, Rabat, Morocco. Contact: Pr. M. Berrada, Lab. de Physique Nucléaire, Faculté des Sciences, B. P. 1014 Rabat, Morocco (Fax 212-7-77-99-78).

#### **October 1994**

*Fourth Conference on Radiation Protection and Dosimetry*, Oct. 24–26, 1994, Orlando, Florida, sponsored by the Oak Ridge National Laboratory. Contact: J. S. Bogard, ORNL, P.O. Box 2008, Oak Ridge, TN 37831-6379 (phone 625-574-5851, fax 615-574-9174).

#### **November 1994**

*2nd Radiation Physics Conference*, Nov. 20–24, 1994, Sadaat City, Egypt, sponsored by the Atomic Energy Authority, Menoufia University. Contact: Prof. M. A. Gomaa, Atomic Energy Authority, 101. Kasr El-Aini Street, Cairo, Egypt (phone 02-355-8269/8264, fax 02-354-0982).

#### **March 1995**

*5th Topical Meeting on Tritium Technology in Fission, Fusion, and Isotopic Applications*, Mar. 26–31, 1995, Augusta, Georgia, sponsored by the ANS. Contact: C. E. Murphy, Westinghouse SRC, Savannah River Lab., Aiken, SC 29808.

## 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. For literature listed as available from INIS contact INIS Clearinghouse, International Atomic Energy Agency, P.O. Box 100, A-1400 Vienna.

*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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**Am. Inst. Phys., 271, 805-810; CONF-930103.** . *MCNP Benchmark Analyses of Critical Experiments for the Space Nuclear Thermal Propulsion Program.* . Selcow, E.C.; Cerbone, R.J.; Ludewig, H.; Mughabghab, S.F.; Schmidt, E.; Todosow, M.; Parma, E.J.; Ball, R.M.; Hoovler, G.S. . 01/93. . From 10. Symposium on space nuclear power and propulsion; Albuquerque, NM (10-13 Jan 1993).

**Atomic Energy 72, 67-72 (English Translation).** . *Technique for Calculating Radioactivity Penetration into Soil Through a Break in the Lower Part of the Containment Shell During a Nuclear Power Plant Accident.* . Basanskii, E.G.; Bondarenko, A.G.; Gavrilov, A.L.; Kudryashov, N.A.; Kul'zhik, M.N.; Pokrovskii, S.M. . 07/92

**CEA-CONF-11276; CONF-930404.** . *An Anisotropic Scattering Treatment for the Even Parity Transport Equation.* . Akherraz, B.; Fedon-Magnaud, C.; Lautard, J.J. . 1993. . OSTI; NTIS (US Sales Only); INIS. . From International topical meeting on mathematical methods and supercomputing in nuclear applications (M&C+SNA '93); Karlsruhe, Germany.

**Health Phys. 65, 272-282.** . *Residual  $^{152}\text{Eu}$  and  $^{60}\text{Co}$  Activities Induced by Neutrons from the Hiroshima Atomic Bomb.* . Kiyoshi Shizuma; Kazuo Iwatani; Hiromi Hasai; Masaharu Hoshi; Takamitsu Oka; Hiroshige Morishima. . 1993

**Health Phys. 65, 405-413.** . *An Extended Tabulation of Effective Dose Equivalent from Neutrons Incident on a Male Anthropomorphic Phantom.* . Stewart, R.D.; Tanner, J.E.; Leonowich, J.A. . 1993

**Nucl. Energy Agency 75, 152-163.** . *Evaluation of the Quality Especially of Wind-Forecasts by the Operational Meteorological High Resolution Limited Area Model.* . Machenhauer, B.; Nielsen, U.B.; Rasmussen, A. . 1991. . Specialists' Meeting. Saclay, France (6-8 Mar 1991)

**Nucl. Energy Agency, 75, 174-184.** . *Uncertainty Analysis for Dispersion and Deposition Active Issues.* . Cooke, R.; van der Weide, H. . 1991. . Specialists' Meeting. Saclay, France (6-8 Mar 1991)

**Nucl. Eng. International 37, 43-46.** . *Why Are We Still Using Cobalt? Pilgrim's Progress Points the Way.* . Wagner, E.; Vazquez, G. . 10/92

**Nucl. Eng. and Design 137, 71-75.** . *Calculation of Neutron Fluence in the Region of the Pressure Vessel for the History of Different Reactors by Using the Monte-Carlo-Method.* . Barz, H.U.; Bertram, W. . 09/92. . Extended and updated paper from the 'Annual meeting on nuclear technology '90', Nuremberg, Germany (15-17 May 1990).

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