



RSIC Newsletter

Oak Ridge National Laboratory
POST OFFICE BOX 2008 ! OAK RIDGE, TENNESSEE 37831-6362
MANAGED BY MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE U.S. DEPARTMENT OF ENERGY

Phone No. 615-574-6176
FAX 615-574-6182

BitNet: PDC@ORNLSTC • Internet: PDC@ORNL.GOV

No. 360

November 1994

Mere words are cheap and plenty enough, but ideas that rouse and set multitudes thinking come as gold from the mines.—A. Owen Penny

RSIC Availability on World Wide Web (WWW)

RSIC recently switched from gopher service to WWW service. The RSIC WWW server can be accessed through MOSAIC by opening the URL (Uniform Resource Locator):

<http://epicws.epm.ornl.gov>

For users with Internet connections, MOSAIC programs are available through anonymous ftp from 'ftp.ncsa.uiuc.edu'.

Information currently available includes computer code abstracts, listings of files, newsletters, registration form, and order form. Relevant information continues to be added.



CHANGES TO THE COMPUTER CODE COLLECTION

Three changes were made to the computer code collection during the reporting period. Two new codes systems were packaged and added to the collection and an existing code package has been corrected. Two changes resulted from foreign contributions.

CCC-467/ITS 3.0

OP SYS: UNIX, MVS,
VMS, DOS

Language: Fortran 77

Computers: Many

Format: tar, DOS

Sandia National Laboratories, Albuquerque, New Mexico, announced a correction for the ITS 3.0 code system. The integrated TIGER code system permits a state-of-the-art Monte Carlo solution of linear time-integrated coupled electron/photon radiation transport problems with or without the presence of macroscopic electric and magnetic fields of arbitrary spatial dependence. The system does not properly account for the energy of bremsstrahlung photons that are generated below the photon cutoff energy. This energy should be deposited locally. In the rare situations where this energy is significant there will be some underprediction of energy deposition. Users should employ the UPEML utility to make the following two corrections (one is for the 1D codes and other is for the multidimensional codes):

```
*INSERT,BREMS.60          IF(EP.LT.TPCUT)CALL EQDEP(1,I,PR,W,EP,ZP)
*INSERT,BREMS.205         IF(EP.LT.TPCUT)CALL EQDEP
(1,I,PR,W,EP,XP,YP,ZP,LP)
```

Version 3.0 of ITS is operable on the Cray, IBM-3081, VAX, IBM RISC and SUN workstations and requires about 9 megabytes of hard disk space. The DOS version runs on 386/486 personal computers with math coprocessors and requires 19 MB of hard disk space for sample runs and 28 MB for source files with sample runs. References: SAND91-1634 (March 1992), SAND92-0073 (April 1992) and informal notes. Fortran 77; Cray, IBM, VAX (C00467/MFMWS/00) or IBM PC (C00467/PC486/01).

CCC-625/GNOMER

OP SYS: DOS

Language: Fortran 77

Computers: Many

Format: DOS

The Institute "Jozef Stefan" University of Ljubljana, Ljubljana, Slovenia, contributed this code system to solve the multigroup neutron diffusion equation in 1D, 2D, and 3D Cartesian geometry. The program is designed to calculate the global core power distributions (with thermohydraulic feedbacks) as well as power distributions and homogenized cross sections over a fuel assembly. The highly efficient Green's function nodal method is used for solving the neutron diffusion equation. Temperature distributions are calculated using relatively simple thermohydraulic models. Cross sections are adjusted for off-nominal temperatures and boron concentration by the reactivity coefficient method. Cross-section homogenization can be performed with the Effective Diffusion Homogenization (EDH) method.

GNOMER is written in Fortran 77 and runs on IBM PC or compatibles with 640 K of RAM and DEC VAX computers. The MS Fortran v5.01 (or higher) and NDP Fortran-486 v4.0.2 are the recommended compilers for the PC and were used to create the two executables included in the package. Reference: IJS-DP-6688 (August 1993). The package is distributed on one DS/HD 3.5-in. (1.44 MB) diskette written in DOS format. Fortran 77; IBM PC and DEC Vax (C00625/MNYCP/00).

PSR-344/WILIT

OP SYS: DOS, VMS

Language: Fortran 77

Computers: Many

Format: DOS

The Nuclear Research Institute, Rez, Czechoslovakia, contributed the WILIT utility program for modifying and testing data in the WIMS library format. The following functions can be performed: conversions between binary and card-image form; extraction of data for specified material and re-inclusion (after possible editing) in the library with different identification number; reduction of library contents (number of materials); comparison of selected data sets with interpolation in resonance integral tables; replacement of fission spectrum; and inclusion of cross sections calculated by FEDGROUP-R. One of three interpolation schemes (WIMS, Segev's, Greene's) are used when comparing data from resonance integral tables.

WILIT runs on IBM PC and compatibles and DEC Vax computers running VMS. The MS Fortran v5.0 compiler and MS Linker were used to create the executable included in the package. Reference: UJV 8937-R (1991). Fortran 77; IBM PC and DEC Vax (P00344/MNYCP/00).

CHANGE TO THE DATA LIBRARY COLLECTION

One data library was packaged and added to the data library collection.

**DLC-172/
NUCDECAY****OP SYS:** DOS**Language:** Fortran 77**Computers:** PC**Format:** DOS

Oak Ridge National Laboratory, Oak Ridge, Tennessee, contributed this library of nuclear decay data for radiation dosimetry calculations. The unabridged data used in preparing International Commission on Radiological Protection (ICRP) Publication 38 and a monograph of the Medical Internal Radiation Dose (MIRD) Committee of the Society of Nuclear Medicine are distributed in electronic form in this package. The data are assembled in two collections. The collection referred to as ICRP38 consists of data on the energies and intensities of radiations emitted by the 825 radionuclides reported, although abridged, in ICRP Publication 38 plus an additional 13 radionuclides evaluated during preparation of a monograph for the MIRD Committee. The second collection, denoted as MIRD, contains data for the 242 radionuclides in the MIRD monograph noted above.

Four utility codes are provided. The code DEXRAX is used to extract the decay data from the library for radionuclide(s). The utility CHAIN lists the decay chain headed by a user-specified radionuclide. The RADLINE code identifies radionuclides which emit alpha or photon radiations of a user-specified energy. The executables and most of the source codes are provided. The Microsoft Fortran 5.1 compiler was used to compile the CHAINS code and the READDEC portion of the DEXRAX code. The full source for DEXRAX is not provided as that implementation must be linked with two special libraries. The source code is provided for a QBASIC version of the utility RADSUM. This version of RADSUM does not include plotting of the beta spectra or computations of the gamma constant. Other utilities were written in Microsoft BASIC Professional Development System. The package is distributed on two DS/HD 3.5-in. (1.44 MB) diskettes written in compressed DOS files. References: ORNL/TM-12350 (December 1993), *Health Phys.* 67(4):338-345 (1994). Fortran 77 and BASIC; PC 386 (D00172/PC386/00).

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.

Gail H. Marcus has been appointed director of the Advanced Reactors Project Directorate in the Office of Nuclear Reactor Regulation at the U.S. Nuclear Regulatory Commission. She will be responsible for the design certification review of applications for gas, heavy-water, and liquid-metal reactors.

John W. Poston, Sr., head of the nuclear engineering department at Texas A&M University, has received the 1994 Founder's Award from the Health Physics Society (HPS). The award recognizes exceptional and recent service to the society or to the health physics profession. Poston's research focuses on internal and thermoluminescent dosimetry.

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.

VOLGA-95 Call for Papers

VOLGA-95 is the 9th in a series of scientific conferences organized to bring together physicists and experts from different countries to discuss problems, experience gained, and advances in nuclear reactor safety. The meeting will be held **September 4-8, 1995**, in Volga, Russia. An abstract of no more than 150 words should reach the organizing committee by **February 1, 1995**. Papers are invited from the following list topics:

- M Methods for analysis and quantitative indices of nuclear safety.
- M Methods of modelling the stationary and non-stationary processes in nuclear reactors for safety justification.
- M Comprehensive mathematical models, computer codes and analysis of nuclear reactor dynamics.
- M Experimental investigations for studying reactor safety.
- M New physical ways to upgrade safety level of operating nuclear power installations.
- M Concepts of advanced reactors with improved safety and their fuel cycle.

The conference languages will be Russian and English with simultaneous translation provided. The conference fee of \$300 will cover all local expenses including accommodation and local travelling. Further details may be obtained from Prof. V. Khromov, Department Head, Chairman of Organizing Committee, Prof. V. Naumov, Program Chairman, or Dr. L. Goncharov, Scientific Secretary at the Moscow Engineering Physics Institute, Kashirskoe Shosse 31, Moscow, 115409, Russia (phone +7-095-323-9242; fax +7-095-324-7026; email volga@rephyd.mepi.msk.ru).

3rd International Workshop on Dosimetry for Radiation Processing

The American Society for Testing and Materials (ASTM) Subcommittee E10-01 is sponsoring the *Third International Workshop on Dosimetry for Radiation Processing*. The workshop will be held **October 1-6, 1995**, in Québec, Canada. All aspects of radiation processing dosimetry will be covered with lectures by experts in the field and with workshops providing maximum interaction between participants. Hands-on dosimetry workshops will be conducted at the nearby Canadian Irradiation Centre. The workshop will benefit anyone involved in radiation processing dosimetry, including irradiation operators and quality assurance personnel, researchers, dosimeter suppliers, medical device manufacturers, and food processors. Further information may be obtained from John D. Rickey, Far West Technology, Inc., 330 D S. Kellogg, Goleta, CA 93117 (phone 805-964-3615; fax 805-964-3162).

Calendar

Your attention is directed to the following events of interest.

January 1995

12th Symposium on Space Nuclear Power and Propulsion, Jan. 8-12, 1995, Albuquerque, New Mexico. Contact: Mohamed S. El-Genk, Inst. for Space Nuclear Power Studies, University of New Mexico, Albuquerque, NM 87131-1341 (phone 505-277-5442).

International Conference on Fluxes and Technological Enhancement of Radionuclides In and Around Large-Scale Non-Nuclear Industries, Jan. 9-13, 1995, Khon Kae, Thailand, sponsored by Lund University. Contact: Lund University, Dept. of Rad. Phys., E. Holm, S-22185, Lund, Sweden (fax 46-46-127249).

Radiation Safety Program Management, Jan. 23-27, 1995, Albuquerque, New Mexico. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440, fax 203-738-9322).

Health Physics Training & Education—28th Midyear Topical Meeting of the Health Physics Society, Jan. 29–Feb. 1, 1995, Charleston, South Carolina. Contact: HPS, Suite 130, 8000 Westpark Drive, McLean, VA 22102 (phone Glenn Sturchio at 908-594-6267).

February 1995

Radiation Safety Officer, a technical short course, Feb. 6–10, 1995, Las Vegas, Nevada. Contact: Nevada Technical Assoc., Inc., P.O. Box 90748, Henderson, NV 89009 (phone 702-564-2798).

Environmental Monitoring, Feb. 6–10, 1995, Washington, DC. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440, fax 203-738-9322).

Radiation Detection & Measurement, Feb. 20–24, 1995, Orlando, Florida. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440, fax 203-738-9322).

International Conference on Internal Radiation

Protection Dosimetry: Occupational Workers and the Public, Feb. 21–24, 1995, Bombay, India, sponsored by the Indian Association of Radiation Protection. Contact: Dr. R. C. Sharma, IARP, Low-Level Counting Laboratory, BARC Hospital, Anushaktinagar, Bombay 400 094, India (phone 91-022-5512936; fax 91-022-556-0750).

Waste Management '95, Feb. 26–Mar. 2, 1995, Tucson, Arizona. Contact: WM Symposia, Inc., Suite 19, 245 S. Plumer, Tucson, AZ 85719 (phone 602-624-8573; fax 602-792-3993).

Higher European Research Course for Users of Large Experimental Systems: Neutron and Synchrotron Radiation for Condensed Matter Studies, Feb. 26–Apr. 7, 1995, Grenoble, France. Contact: CNRS, Sec. Hercules, P.O. Box 166X, Maison des Magisteres, F-38042, Grenoble Cedex 6, France.

March 1995

34th International Nuclear and Particle Physics University Meeting: Low-Dimensional Models in Statistical Physics and Quantum Field Theory, Mar 4–11, 1995, Schladming, Austria. Contact: Univ. Graz, Inst. f. Theoretische Physik, Universitätsplatz 5, A-8010, Graz, Austria (fax 43-316-384091, email utp@edvz.kfunigraz.ac.at).

Radiation Transport Calculations Using the EGS4 Monte Carlo System, Mar. 6–9, 1995, Seattle, Washington. Contact: Ms. Suzan Walker, Computer Services Director, The Lawrence H.

Lanzl Inst. of Medical Physics, 3876 Bridge Way N., Suite 300, Seattle, WA 98103-7951 (phone 206-545-1141; fax 206-545-1347; email suzan_walker@lanzl.com).

Transportation & Packaging of Radioactive Materials, Mar. 6–10, 1995, Washington, DC. Contact: Technical Management Services, Inc., P.O. Box 226, New Hartford, CT 06057 (phone 203-738-2440, fax 203-738-9322).

1995 HEART Conference, Mar. 13–17, 1995, Sandia National Laboratories, Albuquerque, New Mexico. Contact: Delores Walters, JAYCOR, P.O. Box 85154, San Diego, CA 92138 (phone 619-535-9763).

Internal Dose Assessment, Mar. 13–17, 1995, Knoxville, Tennessee, a course offered by Consultec Scientific, Inc. Contact: Consultec Scientific, Inc., Suite 110, 725 Pellissippi Pkw., Knoxville, TN 37932-3300 (phone 615-675-4333 or 800-269-4333; fax 615-675-4334; email info@consultec.com).

Radiation Health and Risks, Mar. 13–17, 1995, Knoxville, Tennessee, a course offered by Consultec Scientific, Inc. Contact: Consultec Scientific, Inc., Suite 110, 725 Pellissippi Pkw., Knoxville, TN 37932-3300 (phone 615-675-4333 or 800-269-4333; fax 615-675-4334; email info@consultec.com).

Gamma Spectroscopy, March 20–24, 1995, 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 or 615-241-4888; fax 615-576-9383).

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.

Health Physics for the Industrial Hygienist, March 27–31, 1995 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 or 615-241-4888; fax 615-576-9383).

April 1995

High Performance Computing '95, Apr. 9–13, 1995,

Tucson, Arizona, sponsored by the Society for Computer Simulation. Contact: High Performance Computing '95, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439 (email tentner@pepper.ra.angl.gov).

Applied Health Physics, Apr. 10–May 12, 1995, in Oak Ridge, Tennessee, a five-week 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 or 615-241-4888; fax 615-576-9383).

31st Annual Meeting of the National Council on Radiation Protection and Measurements, Apr. 12–13, 1995, Arlington, Virginia. Contact: NCRPM, Suite 800, 7910 Woodmont Ave., Bethesda, MD 20814-3095 (phone 800-229-2652; fax 301-907-8768).

5th Topical Meeting on Emergency Preparedness and Response, Apr. 18–21, 1995, Savannah, Georgia, sponsored by the American Nuclear Society Savannah River Section. Contact: Charles H. Hunter, Jr., Technical Program Chairman, Westinghouse Savannah River Co., Bldg. 773-A, Aiken, SC 29808 (phone 803-725-2953; fax 803-725-4233).

ICONE-3, The Third International Conference on Nuclear Engineering—Nuclear Power and the Energy Future, Apr. 23–27, 1995, Kyoto, Japan. Contact: Mr. M. Takahashi, Japan Society of Mechanical Engineers, Shinjuku-Sanshin Bldg. 5F, 2-4-9 Yoyogi, Shibuya-ku, Tokyo 151 Japan (phone 81-3-3379-6781; fax 81-3-3379-0934); or W. C. Cleff, Sargent & Lundy, 55 E. Monroe St., Chicago, IL 60603.

SCALE Training Course, Apr. 24–28, 1995, in Oak Ridge, Tennessee, sponsored by the DOE Transportation and Packaging Safety Division and hosted by the Radiation Shielding Information Center (RSIC) at ORNL. Contact: Lindy Norris, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6370 (phone 615-574-6471).

International Conference on Mathematics and Computations, Reactor Physics, and Environmental Analyses, Apr. 30–May 4, 1995, Portland, Oregon. Contact: Ms. L. Briggs, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439 (phone +91708-252-4677, fax 708-252-4620, email llbriggs@anl.gov).

May 1995

1995 International High-Level Radioactive Waste Management Conference, May 1–5, 1995, Las Vegas, Nevada. Contact: Allen G. Croff, American Nuclear Society, 555 N. Kensington Ave., La Grange Park, IL 60525.

Conference and International Symposium on Radionuclide Metrology and Its Applications, May 15–19, 1995, Paris, France. Contact: Laboratoire Primaire des Rayonnements Ionisants, P.O. Box 52, F-91193, Gif-sur-Yvette Cedex, France (fax 33-1-69-08-29-19, email ICRM@BABAORUM.CEA.FR).

1st International Conference on Neural, Parallel, and Scientific Computations, May 28–31, 1995, Atlanta, Georgia. Contact: Morehouse College, Dept. of Mathematics, M. Sambandham, 830 Westview Drive, SW, Atlanta, GA 30314 (fax 404-458-7932, email icnpssc@voyager.cau.auc.edu).

June 1995

Air Sampling for Radioactive Materials, June 12–16, 1995, 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 or 615-241-4888; fax 615-576-9383).

Environmental Monitoring, June 26–30, 1995 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 or 615-241-4888; fax 615-576-9383).

July 1995

32nd Annual IEEE International Nuclear and Space Radiation Effects Conference, July 21–27, 1995, Madison, Wisconsin. Contact: United Technologies, Microelectronics Center, 1575 Garden of the Gods Road, Colorado Springs, CO 80907 (fax 719-594-8187).

Joint Annual Meeting of the Health Physics Society and the American Association of Physicists in Medicine to Celebrate the X-Ray Centennial, July 23–27, 1995, Boston, Massachusetts. Contact: Health Physics Society, ATTN: Richard J. Burke, Jr., Suite 130, 8000 Westpark Drive, McLean, VA 22102 (phone 703-790-1745; fax 703-790-9063) or American Association of Physicists in Medicine, ATTN: Salvatore Trofi, Jr., One Physics Ellipse, College Park, MD 20740-3846 (phone 301-209-

3350; fax 301-209-0862).

August 1995

10th Brazilian Meeting on Reactor Physics and Thermal Hydraulics (X ENFIR) and the 3rd Brazilian Meeting on Nuclear Applications (III ENAN), Aug. 7–11, 1995, Rio de Janeiro, Brazil. Contact: Wilma S. Bastos, IEN, C.P. 68550, CEP-21945.970, RJ, Brazil (fax 55-21-5902692; email IENRCB@BRLNCC.BITNET).

Safe Use of Radionuclides, August 21–25, 1995, 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 +91 615-576-3576 or 615-241-4888; fax 615-576-9383).

September 1995

5th International Conference on Radioactive Waste Management and Environmental Remediation, Sept. 3–9, 1995 Berlin, Germany. Contact: ASME Headquarters, Ms. L. Friedman, 345 East 47th St., New York, NY 10017-2392 (fax 212-705-7856) or Battelle Pacific Northwest Laboratory, MSIN K1-19, SC Slate, P.O. Box 999, Richland, WA 99352 (fax 509-375-5963).

VOLGA-95, September 4–8, 1995, in Volga, Russia. Contact: Prof. V. Khromov, Department Head, Chairman of Organizing Committee, Prof. V. Naumov, Program Chairman, or Dr. L. Goncharov, Scientific Secretary at the Moscow Engineering Physics Institute, Kashirskoe Shosse 31, Moscow, 115409, Russia (phone +7-095-323-9242; fax +7-095-324-7026; email volga@rephyd.mepi.msk.ru).

Environmental Monitoring, September 11–15, 1995, 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 or 615-241-4888; fax 615-576-9383).

Applied Health Physics, September 18–October 20, 1995, in Oak Ridge, Tennessee, a five-week 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

or 615-241-4888; fax 615-576-9383).

16th Symposium on Fusion Engineering, Sept. 30–Oct. 4, 1995, Urbana, Illinois. Contact: Cella Elliott, Conference Secretary, Fusion Studies Lab., University of Illinois, Urbana, IL 61801 (phone 217-333-2772; fax 217-333-2906; email miley@uiucvmd.bitnet).

October 1995

International Symposium on Nuclear Energy, Oct. 20–21, 1995, Bucharest, Romania. Contact: C. Briatianu, Univ. Politehnicadin Bucuresti, Facultateade Inginerie Mecanica, Splaiul Independentei Nr. 313, Sector 6, 77206, Bucharest, Romania (phone 40-1-6314010/224).

Annual Meeting of the Society for Industrial and Applied Mathematics, Oct. 23–26, 1995, Charlotte, North Carolina. Contact: Soc. for Indus. and App. Math., 3600 University City Sciences Center, Philadelphia, PA 19104-2688 (fax 215-386-7999, email meetings@siam.org).

November 1995

ANS International Topical Meeting on Managing Plant Life, Nov. 28–30, 1995, Nice, France. Contact: Dr. S. Charbonneau, Tour Fiat, Cedex 16, F-92024, Paris, France.

December 1995

11th International Conference on Packaging and Transportation of Radioactive Materials, Dec. 3–8, 1995, Las Vegas, Nevada. Contact: Laura Dechter, Social & Scientific Systems, Inc., 7101 Wisconsin Ave., Bethesda, MD 20814-4805 (phone 301-986-4870; fax 301-913-0351).

April 1996

Annual Meeting of the National Council on Radiation Protection and Measurements, Apr. 3–4, 1996, Arlington, Virginia. Contact: Natl. Council on Radiation, Protection and Measurements, Suite 800, 7910 Woodmont Ave., Bethesda, MD 20814 (fax 301-907-8768).

Annual Meeting of the Radiation Research Society, Apr. 13–18, 1996, Chicago, Illinois. Contact: Radiation Research Society, M. G. Watson, Suite 600, 2021 Spring Rd., Oak Brook, IL 60521.



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

GRS-93, pp 215-227; CONF-9203279- . . .
Internal Gamma Activity Used for Water Level Indication. . . . Hampel, R.; Pauls, J.; Han Gyu Joo. . . . July 1992. . . . Gesellschaft f. Anlagen- und Reaktorsicherheit (GRS) mbH, Koeln, Germany. . . . FIZ Karlsruhe.

JAERI-M-93-046; INDC(JPN)-163/L. . . .
Benchmark Tests of JENDL-3 and ENDF/B-VI. . . . Kobayashi, Kaoru; Zukeran, Atsushi; Han Gyu Joo. . . . March 1993. . . . Hitachi Ltd., Ibaraki, Japan. . . . INIS (mf only).

FRCEA-TH-421. . . . *Contributions at the Tripoli Monte Carlo Code Qualifying on Critical Experiences and at Neutronic Interaction Study of Fissile Units. . . .* Nouri, A.; Zukeran, Atsushi; Han Gyu Joo. . . . Jan 1994. . . . CEA Centre d'Etudes de Saclay, Gif-sur-Yvette, France. . . . INIS (mf only).

Health Phys., 67, 34-38. . . . *Radiation Protection and Radioactive Scales in Oil and Gas Production. . . .* Testa, C.; Desideri, D.; Meli, M.A.; Roselli, C.; Bassignani, A.; Colombo, G.; Fresca Fantoni, R. . . . July 1994.

Health Phys., 67, 39-46. . . . *Measurement of the Attention Coefficient for Livermore Thoracic Phantom Lungs Fabricated Using Contemporary Materials. . . .* Spitz, H.; Glover, S.; Ning Liu; Smith, B.; Hickman, D.; Kruchten, D.; Anderson, L. . . . July 1994.

Health Phys., 67, 47-52. . . . *Probabilistic Consideration of Consequences of Long-Duration Accidental Releases Based on Complete Weather Data. . . .* Rantalainen, L.; Saikkonen, T. . . . July 1994.

Health Phys., 67, 70-75. . . . *Stochastic Variability in Effective Dose Tissue Weighting Factors: A Monte Carlo Study. . . .* Leslie, W.D. . . . July 1994.

Health Phys., 67, 326-329. . . . *Mean Dose to Lymphocytes During Radiotherapy Treatments. . . .* Brandan, M.E.; Perez-Pastenes, M.A.; Ostrosky-Wegman, P.; Gonshebbatt, M.E.; Diaz-Perches, R. . . . October 1994.

Health Phys., 67, 330-337. . . . *Monte Carlo Calculations of Monoenergetic Electron Depth Dose*

Distributions in LiF Chips: Skin Dose Correction Factors for Beta Rays. . . . Horowitz, Y.S.; Hirning, C.R.; Yuen, P.; Wong, P.; Diaz-Perches, R. . . . October 1994.

Health Phys., 67, 354-362. . . . *Benchmark Test of Neutron Transport Calculations: Indium, Nickel, Gold, Europium, and Cobalt Activation With and Without Energy Moderated Fission Neutrons by Iron Simulating the Hiroshima Atomic Bomb. . . .* Kazuo Iwatani; Masaharu Hoshi; Kiyoshi Shizuma; Masayuki Hiraoka; Norihiko Hayakawa; Takamitsu Oka; Hiromi Has. . . . October 1994.

Health Phys., 67, 486-494. . . . *Discrepancies in Committed Effective Dose Equivalents Calculated Using U.S. Nuclear Regulatory Commission Regulatory Guide 8.34. . . .* Windham, J.R.; Kearfott, K.J.; Mis, F.J. . . . November 1994.

Health Phys., 67, 495-508. . . . *Dose-Rate RBE Factors for Photons: Hematopoietic Syndrome in Humans Vs. Stromal Cell Cytopenia. . . .* Jones, T.D.; Morris, M.D.; Young, R.W. . . . November 1994.

Health Phys., 67, 509-517. . . . *Benchmarking of the CAP-88 and GENII Computer Codes Using 1990 and 1991 Monitored Atmospheric Releases from the Idaho National Engineering Laboratory. . . .* Maheras, S.J.; Ritter, P.D.; Leonard, P.R.; Moore, R. . . . November 1994.

Nucl. Instrum. Methods A332, 521-528. . . . *Neutron Response of an ³He Proportional Counter. Dietz, E.; Matzke, M.; Sosaat, W.; Urbach, G.; Weyrauch, M. . . . 1993. . . .* Physikalisch-Technische Bundesanstalt, D-W-3300 Braunschweig, Germany.

Nucl. Instrum. Methods, A334, 406-414. . . . *Determination of Detection Efficiency for Radon and Radon Daughters with CR 39 Track Detector - A Monte Carlo Study. . . .* Nikezic, D. . . . 1994. . . . Faculty of Natural Sciences, 34000 Kragujevac, Yugoslavia.

Nucl. Instrum. Methods, A345, 379-384. . . . *A Monte Carlo Simulation of the Possible Use of Positron Emission Tomography in Proton Radiotherapy. . . .* Del Guerra, A.; Di Domenico, G.; Gambaccini, M.; Marziani, M. . . . 1994.

Nucl. Sci. Eng., 117, 88-98. . . . *Nucleon Double-Differential Cross Section Based on Anisotropic*

Intranuclear Scattering. . . . Qingbiao Shen; Jingshang Zhang. . . . June 1994. . . . China Institute of Atomic Energy, Beijing, China.

Nucl. Sci. Eng., 117, 99-109. . . . *Double-Differential Cross Section of Light Composite Particles in the Exciton Model*. . . . Qingbiao Shen. . . . June 1994. . . . China Institute of Atomic Energy, Beijing, China.

Nucl. Sci. Eng., 117, 110-120. . . . *The Use of an Expanded Polynomial Orthogonal Set in Approximations to Gamma-Ray Buildup Factor Data*. . . . Michieli, I. . . . June 1994. . . . Ruder Boskovic Institute, Zagreb, Croatia.

Nucl. Sci. Eng., 117, 121-125. . . . *Solution of Depletion Chain Equations Using Nonsingular Bateman Coefficients*. . . . Vukadin, Z. . . . June 1994. . . . Institute of Nuclear Sciences "Vinca", Belgrade, Yugoslavia.

Nucl. Sci. Eng., 118, 1-23. . . . *Diffusion Theory with Discontinuities*. . . . Pomraning, G.C.; Rulko, R.; Bingjing Su. . . . September 1994. . . . Univ. of California, Los Angeles, CA; AECL Res. Whiteshell Labs., Manitoba, Canada.

Nucl. Sci. Eng., 118, 24-37. . . . *Exponential Characteristic Spatial Quadrature for Discrete Ordinates Radiation Transport in Slab Geometry*. . . . Mathew, K.; Sjoden, G.; Minor, B. . . . September 1994. . . . Air Force Institute of Technology/ENP, Wright-Patterson AFB, Ohio.

Nucl. Sci. Eng., 118, 38-53. . . . *The Searchlight Problem for Neutrons in a Semi-Infinite Medium*. . . . Ganapol, B.D.; Kornreich, D.E.; Dahl, J.A.; Nigg, D.W.; Jahshan, S.N.; Wemple, C.A. . . . September 1994. . . . University of Arizona, Tucson, AZ; Idaho National Eng. Lab., Idaho Falls, ID.

Nucl. Sci. Eng., 118, 79-90. . . . *An Extended Step Characteristic Method for Solving the Transport Equation in General Geometries*. . . . DeHart, M.D.; Pevey, R.E.; Parish, T.A. . . . October 1994. . . . Westinghouse Savannah River Co., Aiken, SC; Texas A&M Univ. College Station, TX.

Nucl. Sci. Eng., 118, 91-102. . . . *A New Approximating Model for Gamma-Ray Buildup Factors of Stratified Shields*. . . . Kazuo Shin; Hideo Hirayama. . . . October 1994. . . . Kyoto Univ. Kyoto, Japan; National Lab. for High Energy Phys., Ibaraki, Japan.

Nucl. Sci. Eng., 118, 103-107. . . . *Cadmium Cutoff Energy for MCNP Modeling of Sodimetry Reactions*. . . . Laky, P.G.; Tsoulfanidis, N. . . . October 1994. . . . University of Missouri-Rolla, Rolla, Missouri.

Nucl. Sci. Eng., 118, 108-121. . . . *Approximate Three-Dimensional Correction Factors in Two-Dimensional Reactor Calculations*. . . . Chang Hyo Kim; Jin Young Cho; Han Gyu Joo. . . . October 1994. . . . Seoul National Univ., Seoul, Korea; Korea Atomic Energy Res. Inst., Taejein, Korea.

Nucl. Sci. Eng., 118, 122-126. . . . *Diffusion-*

Accelerated Solution of the Two-Dimensional X-Y Sn Equations with Linear-Bilinear Nodal Differencing. . . . Wareing, T.A.; Walters, W.F.; Morel, J.E. . . . October 1994. . . . Univ. of California, Los Alamos National Lab., Los Alamos, New Mexico.

Nucl. Technol., 107, 243-253. . . . *Radiation Damage in a Rock Salt Nuclear Waste Repository*. . . . Soppe, W.J.; Prij, J. . . . September 1994.

Nucl. Technol., 107, 285-303. . . . *Criticality Data and Validation Studies of Arrays of Mixed-Oxide Fuel Pins in Aqueous and Organic Solutions*. . . . Smolen, G.R.; Rierman, S.R.; Nobuo Fukumura. . . . September 1994.

Nucl. Technol., 107, 304-325. . . . *Criticality Data and Validation Studies of Plutonium-Uranium Nitrate Solutions in Cylindrical and Slab Geometry*. . . . Smolen, G.R.; Lloyd, R.C.; Hideyuki Funabashi. . . . September 1994.

Nucl. Technol. 107, 326-339. . . . *Criticality Data and Validation Studies of Plutonium-Uranium Nitrate Solutions in Annular Geometry*. . . . Smolen, G.R.; Lloyd, R.C.; Tomozo Koyama. . . . September 1994.

Nucl. Technol. 107, 340-355. . . . *Criticality Data and Validation Studies of Mixed-Oxide Fuel Pin Arrays in Pu + U + Gd Nitrate*. . . . Smolen, G.R.; Lloyd, R.C.; Tadakuni Matsumoto. . . . September 1994.

Nucl. Technol, 108, 126-136. . . . *Mass Optimization Studies of Gamma Shield Materials for Space Nuclear Reactors*. . . . Banjac, V.; Sharif Heger, A. October 1994.

Nucl. Technol., 108, 151-156. . . . *Conceptual Designs of Epithermal Neutron Beams for Boron Neutron Capture Therapy from Low-Power Reactors*. . . . Hungyuan B. Liu; Brugger, R.M. . . . November 1994.

Nucl. Technol., 108, 157-170. . . . *Development and Comparison of a TOPAZ-II System Model with Experimental Data*. . . . Paramonov, D.V.; El-Genk, M.S. . . . November 1994.

Nucl. Technol., 108, 191-206. . . . *RELAP5/MOD3 Simulation of the Loss of the Residual Heat Removal System During a Midloop Operation Experiment Conducted at the ROSA-IV Large Scale Test Facility*. . . . Hassan, Y.A.; Banerjee, S.S. . . . November 1994.

Nucl. Technol., 108, 235-255. . . . *Preliminary Neutronics Investigation of the Delayed Neutron Nondestructive Assay of an Integral Fast Reactor Waste Canister*. . . . Cheng-Wei Wu; Henderson, D.L.; Bennett, E.F. . . . November 1994.

LAUR-94-3106. . . . *ENDF/349 Evaluation and Compilation of Fission Product Yields 1993*. . . . England, T.R.; Rider, B.F. . . . October 1994. . . . University of California, Los Alamos National Lab., Los Alamos, NM.

JAERI-Data/Code 94-012. . . . *Benchmark Problems for Intermediate and High Energy Accelerator Shielding*. . . . Hiroshi NAKASHIMA;

Yukio SAKAMOTO; Shun-ichi TANAKA; Akira HASEGAWA; Tokio FUKAHORI; Takahiko NISHIDA; Nobuo S.; Hideo HIRAYAMA, Syuichi BAN, Yoshitomo UWAMINO, Kenji ISHIBASHI, Kiyomitsu KAWACHI, Katsumi HAYASHI, Satoshi IWAI, Osamu SATO, Naoki YAMANO. . . . September 1994. . . . Japan Atomic Energy Research Institute, Japan.

NUREG/CR-6102; ORNL/TM-12460. . . .
Validation of the SCALE Broad Structure 44-Group ENDF/B-Y Cross-Section Library for Use in Criticality Safety Analyses. . . . DeHart, M.D.; Bowman, S.M. . . . September 1994. . . . Oak Ridge National Laboratory, Oak Ridge, TN.

JAERI-Tech 94-019. . . . *Pre-Analyses of SS316 and SS316/Water Bulk Shielding Experiments.* . . . Chikara KONNO; Fujio MAEKAWA; Atsushi IWAI; Kazuaki KOSAKO; Yujiro IKEDA; Yukio OYAMA; Hiroshi MAEKAWA. . . . October 1994. . . . Japan MY NAME IS ALICE

Atomic Energy Research Institute, Japan.

NUREG/CR-1322; PNL-2901. . . . *Critical Review: Radionuclide Transport, Sediment Transport, and Water Quality Mathematical Modeling; and Radionuclide Adsorption/Desorption Mechanisms.* . . . Onishi, Y.; Serne, R.J.; Arnold, E.M.; Cowan, C.E.; Thompson, F.L. . . . January 1981. . . . Pacific Northwest Laboratory, Richland, WA.

NAVSWC TR 91-16. . . . *Boltzmann Transport Equation Algorithms for Infinite-Slab Buildup and Albedo Factors.* . . . Dunn, W.L.; Yacout, A.M.; O'Foghludha, F. . . . September 1990. . . . Naval Surface Warfare Center, Dahlgren, VA.

NEA/NSC/DOC(94)11. . . . *Overview of Physics Aspects of Different Transmutation Concepts.* . . . Matsuura, S.; Landyro, P.A.; Abrahams, K.; Gruppelaar, H.; Rief, D.H.; Grouiller, J.P.; Artiori, C.; Yoshida, . . . 1994.