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 or FTS 624-6176
FAX 615-574-9619
EasyLink Mailbox 62813374
Telex (Answer Back): 854467 (ORNL EPIC UD)
BitNet: PDC@ORNLSTC ▫ Internet: PDC@EPIC.EPM.ORNL.GOV

No. 325 *December 1991*

I have found it helpful to keep constantly in mind that there are really two entries to be made for every transaction) one in terms of immediate dollars and cents, the other in terms of goodwill.)Ralph Hitz

Deterministic Methods Seminar/TORT Workshop Program

The RSIC Seminar/Workshop on Deterministic Methods to be held in February 1992 will be in two parts. The Deterministic Methods Seminar will take up the first 1½ days. The TORT workshop will begin on Wednesday afternoon. A brief overview of the TORT Workshop follows:

FIRST SESSION — WEDNESDAY AFTERNOON — (2/5/92)

THE DISCRETE ORDINATES METHOD
TORT PROBLEM SETUP REQUIREMENTS

SECOND SESSION — THURSDAY MORNING — (2/6/92)

SPECIAL PROBLEM SOLUTION STRATEGIES) FIXED SOURCE
SPECIAL PROBLEM SOLUTION STRATEGIES) SOURCE ITERATIONS
SYSTEM IMPLEMENTATION

THIRD SESSION — THURSDAY AFTERNOON — (2/6/92)

GRAPHICS CAPABILITY
COMPETITIVE PROBLEM SETUP AND SOLUTION

In the group problem solution, the attendees work in small groups setting up solutions of the test problem using one or more approaches. The input will be set up on PCs using text editors supplied by the staff or favorite text editors brought by the participants. Solutions could be made by bringing an input disk to a staff member who would run the code on an IBM workstation. Personal computers and workstations will be made available courtesy of IBM Corporation.

You will find the preregistration form on the back of this page with additional details about accommodations on following page.

REGISTRATION FORM
DETERMINISTIC METHODS SEMINAR/TORT WORKSHOP
sponsored by the
Radiation Shielding Information Center
at the Garden Plaza Hotel/Pollard Auditorium
Oak Ridge, Tennessee
February 3!6, 1992

Name: _____

Citizenship: _____

Organization: _____

Mailing address: _____

_____

_____

_____

Telephone: Commercial: _____ FTS/FAX: _____

REGISTRATION FEE

The registration fee (the activity fee portion to cover coffee breaks, reception, and luncheon is $50) defrays the expenses for conducting the workshop and entitles the registrant to attend all conference functions, including the Monday evening reception and the Wednesday luncheon. Check-in and reception will be held at the Garden Plaza Hotel. Other events will be held at the nearby Pollard Auditorium and Meeting Center.

_____ (a) I enclose $125 for the advanced registration fee (in any negotiable form from a U.S. institution) payable to the Deterministic Methods Seminar. Mail directly to Radiation Shielding Information Center, Oak Ridge National Laboratory, P.O. Box 2008, Bldg. 6025, Oak Ridge, TN 37831-6362.

_____ (b) I will pay $150 registration fee at the Workshop.

Maps of the area surrounding the Garden Plaza Hotel will be available at the registration desk. The maps show several fast food and shopping places within walking distance of the workshop site. The American Museum of Science and Energy is also within walking distance of the site.

Women's Basketball

University of Tennessee-Knoxville Lady Vols vs. Old Dominion University Lady Monarchs at 7:00 on February 4, 1992.

I wish to attend the basketball game _____ with _____ guests.

Important Dates

January 13	Hotel reservations must made to get the reduced rate at the Garden Plaza Hotel
January 24	Preregistration with $125 fee paid in advance. After this date the fee is $150.

Deterministic Methods Seminar/TORT Workshop
February 3!6, 1992
Oak Ridge, Tennessee

The *RSIC Seminar/Workshop on Deterministic Methods* is planned for Monday through Thursday, February 3!6, 1992, in Oak Ridge, Tennessee. Registration will begin on Monday evening at the Garden Plaza Hotel. The seminar which begins on Tuesday morning will consist of invited and contributed papers on development and application of deterministic methods and will last for 1½ days. The workshop will begin on Wednesday afternoon and will consist of 1½ days of presentations and hands-on application of the TORT two- and three-dimensional discrete ordinates system.

Hotel Accommodations/Meeting Site

A block of rooms has been set aside at the Garden Plaza Hotel, 215 S. Illinois Ave., Oak Ridge, TN 37830 (phone 615-481-2468), for the Seminar/Workshop attendees at $52 plus tax for single accommodations and $59 double. A few rooms will be available at the government rate with government identification. Reservations must be made by **January 13, 1992**.

The Garden Plaza will serve as the check-in/reception site for the Seminar/Workshop on Monday evening, February 3, 1992. The hotel is within walking distance of the Pollard Auditorium and Meeting Center, which will be the site of the Seminar and Workshop activities on Tuesday!Thursday, February 4!6.

Conference Fee

The fee to cover expenses for the Seminar/Workshop has been set at $125 for advanced registration and $150 if paid at the check-in desk. A registration form with appropriate instructions is attached to this newsletter. The fee covers all materials, breaks, a substantial hors d'oeuvres reception on Monday evening, and a luncheon on Wednesday afternoon (after the seminar ends and before the workshop begins). **The deadline for advanced registration is January 24, 1992.**

Reduced Airline Fares

Delta Airlines will grant attendees of this Seminar/Workshop special discount fares:

- 40% off coach fares or
- 5% off lowest discount fares

Some restrictions apply. Tickets must be purchased seven days before departure. To obtain the reduced fare:

- Call **800-221-1212** and ask for the Special Meetings Desk and refer to File No. **J29042**.

Reservations can be made by you, your travel agent, corporate travel department, or Delta Airlines. Valid travel dates are January 31, 1992!February 9, 1992.

There are several national car rental services available at the airport.

Special Events)Women's Basketball

The University of Tennessee Lady Vols, 1991 NCAA Women's Basketball Championship team, will play the Old Dominion University Lady Monarchs on Tuesday evening, February 4, 1992. The Lady Vols are currently ranked #1 and have some outstanding new players this year. It is an opportunity to see the best in women's basketball. Arrangements for attendees to see the game will be made (for a modest fee) if sufficient interest exists. Indicate your interest on the registration form.

CHANGES TO THE COMPUTER CODE COLLECTION

During the month there were five changes made to the computer code collection. Three new code systems were packaged and added to the collection, an existing code package was replaced with a newly frozen version, and the documentation for an existing code package was updated.

CCC-371/ORIGEN2

The documentation for this isotope generation and depletion code system was enhanced with the addition of a brief memo highlighting machine compatibility considerations contributed by Oak Ridge National Laboratory. The memo includes various versions of the integer function QQPACK for reading input data to run on VAX/VMS, IBM, CDC, VAX/UNIX, and Cray running COS, CTSS or UNICOS. A few other changes for running on VAX/UNIX and IBM mainframe systems are listed. These changes apply to Version 2.1 (August 1, 1991 release). Users who have this release may contact RSIC for a copy of the memo. 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. References: ORNL/TM-7175 (July 1980), *Nuclear Technology* 62, p 335 (September 1983), and Informal Notes (November 1991, August 1991, December 1985, January 1985, October 1981). Fortran; VAX and PC 386/486 (A), IBM PC (D).

CCC-594/CALKUX MICRO

This code system for calculating exposure transmission of medical X-ray beams through barrier materials was contributed by Douglas J. Simpkin of the Department of Radiology at St. Luke's Medical Center, Milwaukee, Wisconsin. CALKUX performs a variety of functions related to the transmission of medical diagnostic x-ray beams through common shielding materials, including Pb, concrete, steel, gypsum wallboard, and plate glass. Given the broad beam transmission through a barrier, CALKUX will determine what thickness of material caused that transmission. Conversely, for a given barrier thickness, CALKUX will present the transmission and hardened HVL that result from penetration through this barrier. CALKUX runs on IBM PC and compatibles. The code was written in Fortran 77 and was tested under DOS 3.3 (IBM PC). An executable file, produced by the MSFORT Version 4.01 compiler, is included and does not require a math co-processor. The package is transmitted on one DS/DD, 5.25-in. diskette. References: *Health Physics* 53(3):267-279 (1987), *Health Physics* 56(2):151-164 (1989), *Health Physics* 58(3):363-367 (March 1990). Fortran 77; IBM PC.

CCC-595/PUTZ MICRO

This point-kernel photon shielding code system was contributed by Oak Ridge National Laboratory. PUTZ calculates dose rates from three-dimensional photon sources in a three-dimensional system. The code allows the specification of the source and body geometries as simple parallelopipeds and annular parallelopipeds (tanks) and permits the inclusion of multiple sources and multiple detectors in a single case. The point-kernel method employs the Geometric-Progression (GP) formula for the buildup factor. The GP coefficients and attenuation coefficients, taken from the ANSI/ANS-6.4.3-1991 compilation, are read from a data file. PUTZ runs on IBM PC and compatibles with a math coprocessor. The code is written in Fortran 77 and was tested using the Microsoft Version 5.0 compiler. The package is transmitted on one DS/DD, 5.25-in. diskette. References: Informal notes (Oct. 1991), ORNL/TM-9803 (May 1986) and NUREG/CR-5740 (Aug. 1991). Fortran 77; IBM PC.

PSR-231/GRESS 2.0

A newly frozen version of this gradient enhanced software system was contributed by Oak Ridge National Laboratory. This version of GRESS, designated 2.0, has been used in-house at ORNL for the past year and includes new documentation, a symbolic precompiler, and improved portability. The code was tested on VAX/VMS, VAX/ULTRIX, IBM RISC/6000, Hewlett-Packard 9000, and Sun Sparc Station 1+. GRESS utilizes a precompiler to interpret Fortran statements and to symbolically calculate derivatives for each floating point assignment statement. The result of the precompilation step is a new Fortran program that can produce derivatives for

any REAL (i.e., single or double precision) variable calculated by the model along with the original output. Derivatives from a GRESS enhanced model can be used internally (e.g., iteration acceleration) or externally (e.g., sensitivity studies). By calling GRESS runtime routines, derivatives can be propagated through the code via the chain rule (referred to as the CHAIN option) or accumulated to create an adjoint matrix (referred to as the ADGEN option). A new option, GENSUB, makes it possible to process a subset of a program (i.e., a do loop, subroutine, function, a sequence of subroutines, or a whole program) for calculating derivatives of dependent variables with respect to independent variables. GRESS accepts a majority of ANSI-X3.9 Fortran 77, including subroutines, common blocks, data statements, read statements, user functions, intrinsic functions, statement functions, block data subprograms, single and double precision variables, and equivalence statements. The package is distributed on two DD/HD diskettes. Reference: ORNL/TM-11951 (November 1991). Fortran 77 and C; VAX, IBM RISC 6000, Sun Sparc 1+, and HP 9000.

PSR-307/LPROBIT

The University of Pittsburgh, Pennsylvania, contributed this lognormal-probability analysis code system for computing 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. Since distributions of radon measurements are often displayed on lognormal plots, LOGNORML is useful for these data. LOGNORML replaces the LPROBIT package, previously designated PSR-307, because it does everything LPROBIT did, includes a bug fix, includes six new ways of entering data, handles grouped as well as individual data, produces significantly improved and easier to read output, and has much improved documentation. The code runs on IBM PCs and compatibles and the IBM PS/2 Model 50. It is written in Microsoft BASIC 4.5 and runs with MS-DOS QBasic. One DS/DD 5.25-inch diskette is required for transmittal. References: Informal Notes (Sept. 1991), *Health Physics* Vol. 51, No. 4, pp. 437-445 (October 1986). BASIC; IBM PC and IBM PS/2.

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *Dr. T. A. Germogenova*, of the Keldysh Inst. of Applied Mathematics, USSR Academy of Science, Moscow, presented her paper on ``The Adaptive Positive Nodal Method for the Transport Equation in Multidimensional Geometries," during her visit here Nov. 7; *Yoshiko Harima*, Tokyo Institute of Technology; *Toshiko Higashikata*, Tokyo; and *Hideo Hirayama*, KEK, National Laboratory for High Energy Physics, Japan.

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.

Calendar

Your attention is directed to the following events of interest.

January 1992

Groundwater Contaminant Transport Modelling: The Princeton Transport Code, Jan. 6 ! 8, 1992, at the University of Vermont, Burlington. Contact: UVM Conferences, 460 S. Prospect St., Burlington, VT 05401 Attn: Reg-GWtr (Fax 802-656-3891).

February 1992

Deterministic Methods Seminar/TORT Workshop, Feb. 4 ! 6, 1992, Oak Ridge, Tennessee. Contact: R. W. Roussin, Oak Ridge National Laboratory, Radiation Shielding Information Center, P.O. Box 2008, Oak Ridge, TN 37831-6362 (phone 615-574-6176; Fax 615-574-9619).

1992 HEART Conference, Feb. 24 ! 28, 1992, Albuquerque, New Mexico. Contact: DASIAC,

Attention: 1992 HEART Conference, 2560 Huntington Ave., Suite 500, Alexandria, VA 22303.

March 1992

Waste Management '92, Mar. 1 ! 5, 1992, Tucson, Arizona. Contact: University of Arizona, College of Engineering, Building 20, Tucson, AZ 85721.

1992 Topical Meeting on Advances in Reactor Physics, March 8 ! 11, 1992, Charleston, South Carolina, sponsored by the ANS Reactor Physics and Mathematics and Computations Divisions. Contact: Russ Ferrara, Westinghouse Savannah River Co., Savannah River Laboratory, Bldg. 786-1A, Room 5, Aiken, South Carolina 29808 (phone 803-725-8233).

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).

Practical Radiation Shielding, Mar. 9 ! 13, 1992, Atlanta, Georgia, a course sponsored by Shonka Research Associates, Inc., and the Georgia Institute of Technology. Contact: Georgia Tech Continuing Education, Georgia Institute of Technology, Atlanta, GA 30332-0385 (phone 404-894-2400, 800-325-5007).

Occupational and Environmental Radiation Protection, Mar. 23 ! 27, 1992, 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 617-432-1171; Fax 617-432-1969).

April 1992

28th Annual Meeting of the National Council on Radiation Protection and Measurements, Apr. 1 ! 2, 1992, Washington, D.C. Contact: NCRP, 7910 Woodmont Ave., Suite 800, Bethesda, MD 20814 (phone 301-657-2652).

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

Radiation Protection Instrumentation, May 11 ! 15, 1992, 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 617-432-1171; Fax 617-432-1969).

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.

International Symposium on Numerical Transport Theory, May 26 ! 28, 1992, in Moscow. Contact: Prof. T. A. Germogenova, The Keldysh Institute of Applied Mathematics, USSR Ac. of Sci., Miusskaya Sq. 4, Moscow A-47, 125047, USSR (fax 095-972-0737). Participants from the U.S. may contact Prof. Paul Nelson, Dept. of Nuclear Engg., Texas A&M University, College Station, TX 77843-3133 (fax 409-845-6443).

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).

Environmental Radiation Surveillance, June 8 ! 12, 1992, 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 617-432-1171; Fax 617-432-1969).

In-Place Filter Testing Workshop, June 8 ! 12, 1992, 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 617-432-1171; Fax 617-432-1969).

Techniques in Nuclear Radiation Shield Analysis, June 15!19, 1992, a course sponsored by the University of Texas at Austin. Contact: Continuing Engineering Studies, The University of Texas at Austin, College of Engineering, ECJ 10.324, Austin, TX 78712 (phone 512-471-3506, Fax 512-471-0831).

Planning for Nuclear Emergencies, June 15!19, 1992, 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 617-432-1171; Fax 617-432-1969).

July 1992

1992 Nuclear and Space Radiation Effects Conference, July 13!17, in New Orleans. Contact: Nelson S. Saks, NSREC Technical Program Chairman, Naval Research Laboratory, Code 6813, 4555 Overlook Ave., Washington, DC 20375-5000 (phone 202-767-2534, Fax 202-767-0546).

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. 16!19, 1992, Jackson Hole, Wyoming. Contact: Dr. David Woodall, INEL EG&G Idaho, P.O. Box 1625, Idaho Falls, ID 83415-2516.

Occupational and Environmental Radiation Protection, Aug. 17!21, 1992, 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 617-432-1171; Fax 617-432-1969).

September 1992

Hazardous and Radioactive Waste Management (Spectrum 92), Sept. 13!17, 1992, sponsored by the ANS and the U.S. Dept. of Energy. Contact: Dr. Clyde W. Frank, EM-50/6B-158, U.S. Dept. of Energy, 1000 Independence Ave., SW., Washington, DC 20585 (phone 202-586-6382)

8th International Meeting on Radiation Processing, Sept. 14!19, 1992, Beijing, China, sponsored by the International Atomic Energy Agency. Contact: International Meeting on Radiation Processing, P.O. Box 1012 (30), Beijing 100 822, China.

International Symposium on Nuclear Data Evaluation Methodology, Sept. 28!Oct. 2, 1992, Upton, New York, sponsored by Brookhaven National Laboratory. Contact: C. L. Dunford, Brookhaven National Laboratory, NNDC/197D, Upton, New York.

14th International Conference on Plasma Physics and Controlled Nuclear Fusion Research, Sept. 30!Oct. 7, 1992, Wuerzburg, Germany, sponsored by the International Atomic Energy Agency. Contact: IAEA, Conference Service Section, P.O. Box 100, A-1400 Vienna, Austria.

October 1992

Selection and Preparation of Witnesses for Environmental Litigation, Oct. 22!23, 1992, a course sponsored by the University of Texas at Austin. Contact: Continuing Engineering Studies, The University of Texas at Austin, College of Engineering, ECJ 10.324, Austin, TX 78712 (phone 512-471-3506, Fax 512-471-0831).

April 1993

Joint International Conference on mathematical Methods and Supercomputing in Nuclear Applications, Apr. 19!23, 1993, Karlsruhe, Germany. Contact: H. Kuesters, KFK/INR, Postfach 3640 D-W-7500 Karlsruhe 1, Germany, or W. Werner, GRS, D-W-8046 Garching, Germany.

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.

RADIATION SHIELDING LITERATURE

Health Phys., 61, pp. 465-472. . *Calculation of Shielding Door Thicknesses for Radiation Therapy Facilities Using the ITS Monte Carlo Program*. . Biggs, P.J. . October 1991

Health Phys., 61, pp. 519-528. . *Perspective on the Historical Development of Radiation Standards*. . Kocher, D.C. . October 1991

Book. . *Nuclear Physics and Nuclear Reactors*. . Klimov, A. . 1975

Nucl. Saf., 32, pp. 168-175. . *Concepts Associated with New Regulations Governing Radiation Exposure.* . Kline, J.R. . June 1991

Nucl. Saf., 32, pp. 209-221. . *Current Status and Proposed Improvements to the ANSI/ANS-5.1 American National Standard for Decay Heat Power in Light Water Reactors*. . Dickens, J.K.; England, T.R.; Schenter, R.E. . June 1991

Nucl. Saf., 32, pp. 230-241. . *Activities Related to Waste Management*. . Muhlheim, M.D. . June 1991

Ann. Nucl. Energy, 18, 549-565. . *Transport Calculations of Neutron Transmission Through Steel Using ENDF/B-V, Revised ENDF/B-V and ENDF/B-VI Iron Evaluations*. . Williams, M.L.; Aboughantous, C.; Asgari, M.; White, J.E.; Wright, R.Q.;Kam, F.B.K. . March 1991

CNIC-00492; CNDC-0005; INDC-(CPR)-019/L pp.33-40. . *The Evaluation of 23Na(n,y)24Na Reaction Cross Section.* . Hanrong, Y. . 1990

CNIC-00492; CNDC-0005; INDC-(CPR)-019/L pp.41-44. . *The Evaluation of 2H(n,2n)1H Reaction Cross Section.* . Cai, D.; Zhuang, Y.; Wang, Z.; Yu, B. . 1990

CNIC-00492; CNDC-0005; INDC-(CPR)-019/L pp.45-48. . *The Evaluation of 59Co(n,y)60Co Reaction Cross Section and Its Covariance Data*. . Liu, T.; Zhou, D. . 1990

CNIC-00492; CNDC-0005; INDC-(CPR)-019/L pp.49-62. . *Simultaneous Evaluation for Correlated Data of the Fission Cross Section of 230Pu, 238U, and 235U and the Capture Cross Section of 238U*. . Liu, T.; Deng, J. . 1990

CNIC-00492; CNDC-0005; INDC-(CPR)-019/L pp.63-73. . *Analysis of Resonance Cross Section by Means of Corrected SLBW with Multilevel Effect*. . Lu, G.; Qiu, G. . 1990

DESY D3-70. . *Determination of Neutron Spectra Behind Lateral Shielding of High Energy Proton Accelerators*. . Dinter, H.; Tesch, K. . October 1991

Health Phys., 61, pp. 565-574. . *Radiation Shielding Design for a Hot Repair Facility*. . Courtney, J.C.; Dwight, C.C. . October 1991

Health Phys., 61, pp. 601-608. . *Broad Beam Transmission Properties of Some Common Shielding Materials for Use in Diagnostic Radiology*. . Rossi, R.P.; Ritenour, R.; Christodoulou, E. . November 1991

Health Phys., 61, pp. 609-614. . *Measurement of Photon-Energy Albedo From Stratified Shielding Materials*. . Sinha, A.K.; Bhattacharjee, A. . November 1991

Health Phys., 61, pp. 641-646. . *Effects of the Tissue-Air Interface in Calculations of Beta-Particle Skin Dose at a Depth of 70 mu-meters*. . Inskip, P.D.; Wang, Z.; Fen, Y. . November 1991

Health Phys., 61, pp. 647-652. . *Measurements of Radioactivity in Jamaican Building Materials and Y-Dose Equivalents in a Prototype Red Mud House.* . Pinnock, W.R. . November 1991

Health Phys., 61, pp. 653-665. . *Dose Rates for Several Organs in a Human from Contaminated Soil and Hot Particles Using the QAD Computer Code*. . Tsoulfanidis, N.; Phillips, K. . November 1991

JINR P16-91-107. . *Double Differential Neutron and Proton Productions Cross Sections in Nucleus-Nucleus Collisions*. . Komochkov, M.M. . 1991

JINR P16-91-177. . *Neutron Spectra in the Energy Range from 10-8 to Hundreds of MeV Measurement in Hard Scattered Radiation Fields*. . Krylov, A.R.; Timoshenko, G.N.; Aleinikov, V.E. . 1991

KAPL-4731. . *A Variable Timestep Generalized Runge-Kutta Method for the Numerical Integration of the Space-Time Diffusion Equations*. . Aviles, B.N.; Sutton, T.M.; Kelly, D.J.

. September 1991

KEK 91-5. . *Radiation Detectors and Their Uses*. . Miyajima, M. ed.; Sadaki, S. ed. . July 1991. . Proc. of the Sixth Workshop on Rad. Detectors and Their Uses

KEK 91-68. . *Calculations of Dose Equivalents Due to Stray Radiation From A High Energy Electron Beam in a Forward Direction*. . Sakano, M.; Hirayama, H.; Ban, S. . June 1991

KEK 91-88. . *Gamma Ray Transport Calculation Including Bremsstrahlung by the Monte Carlo Code MORSE*. . Namito, Y.; Ueki, K. . August 1991

NUREG/CR-5732; ORNL/TM-11861. . *Iodine Chemical Forms in LWR Severe Accidents*. . Beahm, E.C.; Weber, C.F.; Kress, T.S. . July 1991. . Draft Report for Comment

NUREG/CR-4816; ORNL/TM-10328/R1. . *RP-EDB: Power Reactor Embrittlement Data Base, Version 1*. . Stallmann, F.W.; Kam, F.B.K.; Taylor, B.J. . May 1991

Nucl. Instrum. Methods A295 337-343. . *The High-Energy Transport Code HETC88 * and Comparisons with Experimental Data*. . Alsmiller, R.G.; Alsmiller, F.S.; Hermann, O.W. . March 1990

Nucl. Sci. Eng. 109, 267-277. . *A Neutron Source Imaging Detector for Nuclear Arms Treaty Verification*. . Sailor, W.C.; Byrd, R.C.; Gavron, A.; Hammock, R.; Yariv, Y. . November 1991

Nucl. Sci. Eng. 109, 297-303. . *An Experimental and Theoretical Study of Neutron Leakage and Transport in a Fast Neutron Moderator and Flight-Path Arrangement*. . Druke, V.; Schaal, H. . November 1991

Nucl. Sci. Eng. 109, 304-318. . *Some Use Results for Surface Separation and Optimum Splitting for Simple Cases Based on the Direct Statistical Approach*. . Gurvitz, N.; Dubi, A. . November 1991

Nucl. Technol. 96, 192-201. . *The Equilibrium Concept-An Extended Approach to Assess Long-term Radionuclide Release from Repositories*. . Koster, R.; Rudolph, G. . November 1991

ORNL/CSD/TM-266. . *Actinide Nuclear Data for Reactor Physics Calculations*. . Brady, M.C.; Wright, R.Q.; England, T.R. . July 1991

ORNL/M-1332. . *Validation of SCALE-4 for a Reference Problem Set*. . Bowman, S.M. . July 1991

ORNL/M-1503. . *SAS2H Input and Assumptions for Cases Computing Isotopic Activities for Sequoyah Nuclear Plant*. . Hermann, O.W. . July 1991

Technical Reports Series No. 18. . *Compendium of Neutron Spectra and Detector Responses for Radiation Protection Purposes*. . Griffith, R.V.; Palfalvi, J.; Madhvanath, U. . June 1990

UCLA-FNT-54. . *A New Method and Computational Algorithm for Sensitivity/Uncertainty Analysis for SED and SAD with Application to Beryllium Integral Experiments*. . Song, P.M.; Youssef, M.Z.; Abdou, M.A. . . October 1991

It is a sincere pleasure to serve you. We value your friendship, confidence and loyalty and can think of no more appropriate time than now to tell you so.

May the coming year be a most Happy and Healthful one for you and your family.

RSIC Staff