RSIC Newsletter

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Such things and deeds as are not written down are covered with darkness, and given over to the sepulchre of oblivion . . . Ivan Bunin

OUR FIRST QUOTATION RECYCLED

The above is the first quotation to appear in the *RSIC NEWSLETTER* and was first used in Issue 30, May 1967. Then, as now, it expresses our concern that much information is lost if not properly documented. Only recently we were advised that several computer codes in use at a particular company have never been placed in the public domain, not because they were proprietary, but because they had not been documented properly.

The initial quotation was run in most of the following 10 issues until, getting somewhat tired of it, we used a different one in March 1968. It appears from various comments that the quotation is one of the newsletter's most popular features.

NEW ANS RPS DIVISION OFFICERS

The newly-elected officers of the American Nuclear Society Radiation Protection and Shielding Division for 1983–84 have been announced as follows: Chairman, E. Thomas Boulette, Hanford Engineering Development Center; Vice Chairman, Stephen E. Binney, Oregon State University; Secretary, Richard K. (Kep) Disney, Westinghouse Electric Co.; Treasurer, Ronald L. Kathren, Battelle Pacific Northwest Laboratory; Executive Committee, Daniel T. Ingersoll, Oak Ridge National Laboratory; John C. Courtney, Louisiana State University; and Reginald C. Rogers, Northeast Utilities.

ANS HONORS SIMMONS AND TRUBEY

The Radiation Protection and Shielding Division of the American Nuclear Society continues to include in its Honors and Awards program recognition of members who have been judged as having given outstanding service to the international shielding community. Cited at the June 1983 ANS Meeting in Detroit, were G. Lee Simmons, Scientific Applications, Inc., and David K. Trubey, Oak Ridge National Laboratory. A suitably inscribed desk set, carrying the ANS Seal, was presented to each honoree. The citations read as follows.

On behalf of the American Nuclear Society, the Radiation Protection and Shielding Division is pleased to present to ***G. Lee Simmons*** *its award for Outstanding Service to the Division and for a sustained record of Technical Achievement by virtue of the following contributions:*

He served for a number of years as the chairman of the working group generating Shielding Benchmark Problems for Light Water Reactor plants as part of the Division effort to develop a set of ANS-6 Radiation Protection and Shielding Standards. He was recently a member of the International Technical Program Committee responsible for organizing the Sixth International Conference on Radiation Shielding in Tokyo, Japan, May 16-20, 1983. Through the years, he has taken an active role in developing programs and special sessions for Division meetings.

In the technical area, Simmons has made significant contributions to the understanding and application of radiation transport theory. These contributions include the use of the moments method to generate albedo data that form the basis for cost-effective engineering calculations codes. His work has also involved the complex integration of discrete ordinates and Monte Carlo methods to solve difficult three-dimensional reactor problems. He has demonstrated creative application of radiation transport methods to solve complex, real problems in the area of LWR reactor cavity neutron streaming.

The diversity and continuing efforts of Simmons to support and advance the role and goals of the Radia-

tion Protection and Shielding Division make it fitting that he be recognized at this time for his past services and accomplishments.

* * *

The citation to **David K. Trubey** reads as follows:

He has spent thirty years working in the field of Radiation Protection and Shielding. His efforts have ranged from measuring effective neutron removal cross sections that were used in preliminary design approximations, to the development and application of sophisticated transport codes on the frontier of current technology. He has also worked extensively with nuclear data, with emphasis on gamma-ray cross sections. He has published extensively and was a contributor to the IAEA Engineering Compendium on Reactor Shielding. He was instrumental in the establishment of the Radiation Shielding Information Center, which he managed for several years; and he devised a computer-based information retrieval system that has evolved into the present, internationally famous data service. Trubey worked on the international level in organizing seminar workshops, and was Chairman of the Fifth International Conference on Reactor Shielding held in 1977.

His services to the Radiation Protection and Shielding Division have been outstanding over an extended period of time. He has served on several national committees, and was Chairman of the Division in 1974–1975. He was instrumental in initiating standards activities, serving since 1972 as Chairman of ANS Standards Subcommittee ANS-6 as well as working on and chairing specific working groups. In recognition of his activities, he was elected ANS Fellow in 1976.

We congratulate Lee Simmons for well deserved recognition for his accomplishments and are pleased to recall his friendship and continuing support of RSIC. We accept the tribute to David as appreciation for his personal technical contributions and for the role RSIC fills in collaboration with the international radiation transport and shielding community and as your partner in advancing the state of the art.

RSIC COMPUTER CODES COLLECTION

During the month of June, three new computer codes were added to the codes collection, two existing code packages were extended with new hardware versions, and three code packages were updated.

CCC-123/XSDRN

The IBM version of this multigroup one-dimensional discrete ordinates spectral averaging transport code package was updated to provide JCL, sample data, and comments which will facilitate converting cross sections from the old XSDRN 123-group library into AMPX format. No changes were made to XSDRN. The CDC version of this package was not affected by this update. Reference: ORNL/TM-2500. FORTRAN IV; IBM 360/370 (A), CDC CYBER (B).

CCC-187/SAM-CE

This Monte Carlo time-dependent three-dimensional complex geometry (combinatorial) code package was updated to make the following changes in Subroutine HELP of the IBM version (B) (Rev. 5),

(1) Immediately after the existing statement, 2252 IR=IRPAC, insert the new statement F=F*DMULT

(2) Immediately before the existing statement, CALL GRUPC, insert the new statment DMULT=0.

The changes were submitted by the code contributors, Mathematical Applications Group, Inc. The changes do not apply to the CDC version (A) (Rev. 7). Reference: DNA-2830F; MR-7021, FORTRAN IV. CDC 6600 (A); IBM 360/370 (B).

CCC-274D/TIMEX

This one-dimensional time-dependent multigroup explicit discrete ordinates code package was extended to include a CRAY hardware version, designated (D). The new version was contributed by Los Alamos National Laboratory, Los Alamos, New Mexico. FORTRAN IV; IBM 360/370 (A), CDC 7600 (B), UNIVAC 1106 (C), CRAY (D).

CCC-371/ORIGEN-II-1982

This isotope generation and depletion code (matrix exponential method) was updated to correct sample problem output and make corrections in cross sections for LMFBRs (except FFTF). These corrections were supplied by the code contributor, Oak Ridge National Laboratory. FORTRAN IV. IBM 3033 and CDC (A), PRIME 400 (C).

CCC-444/HERAD

This three-dimensional Monte Carlo code package for calculating radiation damage was contributed by the University of Wisconsin, Madison,

Wisconsin. The package calculates the deposited ion distribution, energy (damage energy, and electronic energy deposition) distributions, and defects distributions in materials, due to bombarding the target material with an ion beam. Monoenergetic, Gaussian, or Maxwellian energy distributions may be used for the incident ions. The target may be homogeneous or heterogeneous, i.e., contains voids or bubbles distributions. Reference: UWFDM-479. FORTRAN IV; CRAY-1.

CCC-445/PAVAN

This atmospheric dispersion code system for evaluating design basis accidental releases of radioactive materials from nuclear power stations was contributed by Pacific Northwest Laboratory, Richland, Washington, via the U.S. Nuclear Regulatory Commission, Washington, D.C. Using joint frequency distributions of wind direction and wind speed by atmospheric stability, the program provides relative air concentrations (X/Q) values as functions of direction for various time periods at the exclusion area boundary (EAB) and the outer boundary of low population zone (LPZ). Calculations of X/Q values can be made for assumed ground-level releases (e.g., through building penetrations and vents) or elevated releases from freestanding stacks. Reference: NUREG/CR-2858 (PNL-4413). FORTRAN IV; IBM 3033 and 3038.

PSR-45/GAUSS VII

This code system for analysis of gamma-ray spectra from Ge(Li) spectrometers was extended to include a CDC version (B) contributed by EG&G, Inc., Idaho Falls, Idaho. This new version represents new technology available since the GAUSS V package was initially created, therefore this version has been given the name GAUSS VII. We will retain the original IBM version (A) until GAUSS VII has also been implemented on IBM computers, at which time Version VII will replace it.

GAUSS VII can determine the energy and width calibration equations, locate individual peaks and define "peak regions" that are significantly above the local spectral background. The user may edit these lists of peaks and regions. Each peak region is fitted with one or more components in which the peaks are represented by a Gaussian function or a Gaussian with one or two additive exponential tails on the low-energy side and one on the high energy side. Reference: EGG-PHYS-5890. FORTRAN IV; IBM 360/370 (GAUSS V), CDC (GAUSS VII).

PSR-190/ADENA

This code package for application of adjusted data in calculating fission-product decay energies and spectra was contributed by Los Alamos National Laboratory, Los Alamos, New Mexico. ADENA calculates fission-product beta and gamma-ray decay energies and spectra in 19 or fewer energy groups from a mixture of ^{235}U and ^{239}Pu fuels. The calculations use aggregate, adjusted data derived from a combination of several experiments and summation results based on the ENDF/B-V fission-product data file. These adjusted data are in the form of parameters contained in data statements in the code. An approximate correction to account for the effects of neutron absorption is included. Reference: LA-9362-MS. FORTRAN IV; CDC (A), IBM 3033 (B).

CHANGES TO THE DATA LIBRARY COLLECTION

There was one change to the data library collection during the month.

DLC-103/ENDL82

This data package includes only the Evaluated Neutron Data Library (ENDL), and does not include the charged particle (ECPL), activation (ACTL), and gamma-ray (EGDL) libraries as was reported in the May 1983 issue of the Newsletter. New versions of ECPL, ACTL, and EGDL will be added in the near future. The present ENDL82 package contains Livermore Evaluated Neutron Library Data in Transmittal Format in the entire range of elements.

A LETTER FROM A FRIEND ON MICROS

Dear RSIC,

In the February issue there was a note on the use of microcomputers, especially in the field of radiation analysis and shielding. At the moment I have no such programs, but I see the possibility of using micros, even for quite large programs.

The last two years I have been using an Apple II+ with 64 kbytes of RAM and lots of peripherals. Just a few months ago I bought an old Corvus 10-Mbyte Win-

chester disk drive and two 8-in. disk drives with 620 kbytes of storage each. To avoid the limitations of the Apple II keyboard and 40 column screen, I am using an external terminal, at the moment an Hazeltine 1510. For letters I am using a NEC Spinwriter 5530 printer. I also use an Epson MX 100 matrix printer for informal printouts.

In the beginning I used software written for Apple DOS 3.3, after some time I started using the UCSD p-system (including Pascal and FORTRAN) but now I am using the CP/M operating system most of the time. Wordstar is used for word-processing, Z-term for communication with IBM and CDC large computers (telephone line) and Microsoft's FORTRAN-80 for programming. Soon I will start using the dBase-II relational data base program.

Besides for word-processing the Apple has been very valuable in preparing input for SCALE and storing the output on disks. A problem is the slow transfer of data on the telephone lines (300 baud). It is possible that the 8-in. disks may be used to transfer data from the IBM computer to the Apple.

As the Apple supports grahics it would be a good idea to write a program that will check SCALE input and display the KENO geometry on the screen. The graphics can also be plotted easily by an Epson (or similar) matrix printer. Also the output can be treated graphicaly. As usual I have not had time to implement my ideas. I am of course interested in any kind of use of micros in the radiation and shielding areas and will inform you if I write any programs myself.

DENNIS MENNERDAHL
Tunavägen Pl 457, S-186 00 Vallentuna, SWEDEN

VISITORS TO RSIC

During the month of June the following persons came to visit/use RSIC facilities: *John G. Campbell,* Nuclear Research Officer, Defense Nuclear Agency, Alexandria, Virginia; *Goro Hiromoto,* Instituto de Pesquisas Energeticas & Nucleares, Sao Paulo, Brazil; *D. E. Haag,* Deputy Head: Library Services, Nuclear Development Corporation, Pretoria, South Africa.; *Yigal Ronen,* Nuclear Engineering Professor at Ben Gurion University of Beer Sheva, Israel, and President of the Israeli Nuclear Society.

PERSONAL ITEMS

In serving a specialized area of scientific endeavor, it seems important that we take note of the movement 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. During the past month we have been informed of the following changes: *Richard Benjamin,* from US DOE, Washington, D.C., to Savannah River Laboratory; *C. D. Thomas,* from Science Applications, Inc. to Yankee Atomic Electric Co., Framingham, Massachusetts; *George Sulaita,* from Southern Methodist University to La Habra, California; *Richard L. Donovan,* from McLean Research Center, Inc., to Eagle Research Group, Arlington, Va.; *Arthur H. Ahrens,* from F.D.A. Reserve, Reg. 1, New York, to USATSC, San Francisco, Calif.; *Eugene Normand* is on loan for a year to GPU Nuclear, Parsippany, N.J. from Northwest Energy Service Co. *Robert F. Bennati* is now Head of Nuclear Engineering Dept., Polytechnic Institute of New York succeeding the late John R. Lamarsh.

Joe H. McCleskey has left Energy Incorporated and is doing nuclear engineering and radiation protection consulting with his own firm, Pied Piper, Inc., Idaho Halls, Idaho.

Guide to NRPB Publications

The U.K. National Radiological Protection Board has the functions of advancing knowledge about the protection of mankind from radiation hazards and of providing advice and information to persons (including government departments) with responsibilities for radiological protection. The Board is also empowered to provide technical services and to charge for those services. The Board's interests cover every aspect of protection against both ionizing and non-ionizing radiation. It is independent of industry and other users of radiation, of the regulatory bodies and of pressure groups, but needs to communicate with these and a variety of other audiences, each with its particular interests.

Inevitably, the Board communicates with these audiences in many ways, through correspondence, at meetings and conferences, through the press, etc. It publishes much of its information in scientific journals. However, the Board has also developed its own system of publications. The system reflects the diversity of subject matter and interested parties.

A list of Board publications is available from the Information Officer, National Radiological Protection Board, Chilton, Didcot, Oxon OX11 0RQ, telephone Abingdon (0235) 831600.

Except where otherwise stated, publications are available from Her Majesty's Stationery Office and Agents overseas (or direct from HMSO, P.O. Box 569, London SE; the International Standard Book Number (ISBN) of each publication should be quoted.

Many NRPB reports and other publications are now available on microfiche from Chadwyck-Healey Ltd, who publish a "Catalogue of British Official Publications not published by HMSO." This is produced and cumu-

lated annually. The catalogue includes all NRPB reports and the more significant of these are made available on microfiche. For further information contact Chadwyck-Healey Ltd., 20 Newmarket Road, Chambridge, CB5 8DT.

Reevaluations of Dosimetric Factors Available

The Technical Information Center, U.S. Department of Energy, has published *Reevaluations of Dosimetric Factors, Hiroshima and Nagasaki,* proceedings of a symposium held Sept. 15–16, 1981, at the U.S. Department of Energy, Germantown, Maryland. Recent research indicates that significant revisions may have to be made in the estimates of radiation doses to survivors of the atomic bombs at Hiroshima and Nagasaki. Studies of health effects among these survivors and their correlation with the doses estimated in the late 1950s and early 1960s have provided a fundamental data base for estimating radiation risk. Because of the profound implications of any substantial modifications of the estimated neutron and gamma-ray doses in the two cities, this book explores the current status of research and assesses future directions and priorities. The thirteen papers provide a comprehensive discussion of the many factors that affect the dose estimates, including weapon yields, prompt and delayed neutron and gamma-ray source terms, air transport, and structure and body shielding.

The volume contains detailed information on the historical perspective, recent developments (notably in significant improvements in source terms and air-transport calculations), and plans for future research efforts. There is little in this volume that has or will soon become outdated. This volume will be of interest both to physicists concerned with state-of-the-art radiation dosimetry and to radiobiologists interested in the application of such data to risk assessment.

The book is available as DE81026279 (CONF-810928) for $15.75 from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161, 306 pages.

ISO Handbook Available

The International Standards Organization (ISO) has collected its recommendations on symbols, terminology, and units into a single volume, "ISO Standards Handbook 2: Units of Measurement" (2nd Edition, 1982). Symbols, definitions, and recommended units are given in tabular form for a wide range of quantities. Areas covered include mechanics, heat, electricity and magnetism, light, nuclear physics, ionizing radiation, physical chemistry, and others. There are also sections on mathematical notation and conversion factors. These ISO recommendations form the basis of the recommended practices of most national and international bodies. Copies may be obtained from the American National Standards Institute, International Department, 1430 Broadway, New York, NY 10018.

UPCOMING MEETINGS, COURSES, AND CONFERENCES

We call attention to the following courses and conferences of interest to the shielding community.

Ninth International CODATA Conference

The Ninth International CODATA Conference, under the auspices of the Israel Academy of Sciences and Humanities, will be held 24-28 June 1984 in Jerusalem, Israel. The scientific program is built along both Sessions and Symposia.

The six sessions deal with broad interdisciplinary and disciplinary topics. Each session consists of an invited paper and oral/poster contributed papers. Topics included are: Methodology of Scientific Consolidation and Processing of Data; Computerized Databases, Technology and Management; Computer Techniques in Data and Systems Analysis; Numerical Information Systems in Materials Science, Technology and Engineering; Numerical Information Processing in Biosciences; and Numerical Data Processing in Geosciences.

Symposia, organized by individual experts, deal with specific, well defined and framed numerical data topics within a given discipline or subdiscipline. All symposia are grouped into four broad areas: Bio- and pre-clinical medical sciences; Geosciences, oceanography and environmental sciences; Chemistry, chemical engineering, and materials science; and Physics, metallurgy and energy-related topics.

Further information may be secured fromm Professor A. S. Kertes, Institute of Chemistry, the Hebrew University, Jerusalem 91904, Israel (Telephone: +972 2 585354; Telex: 25391 HU IL).

Twelfth International Symposium on Effects of Radiation on Materials A call for papers is issued for the Twelfth International Symposium on Effects of Radiation on Materials to be held on 18-20 June 1984 at Williamsburg, Virginia. The symposium is sponsored every two years by ASTM Committee E-10 on Nuclear Technology and Applications.

The symposium will provide a forum for researchers to present recent developments in the field of irradiation effects on materials. Appropriate topics for contributed papers include the effects of radiation on metals and alloys irradiated in operating or simulated thermal, fast, or fusion reactor environments. In addition, the importance of safe radioactive waste disposal to the nuclear industry dictates the continued discussion on radiation effects in solid waste forms.

Abstracts must be submitted with an ASTM Paper Submittal Form which is available from Symposium

Chairman, Jim Perrin, Fracture Control Corporation, 340 G. South Kellogg Avenue, Goleta, California 93117 805/964-8877; or Kathy Greene, Manager, ASTM Publications Division, 1916 Race Street, Philadelphia, Pennsylvania, 215/299-5414.

Calendar

Your attention is called to the following additional events.

August 1983

Nuclear Accident Dosimetry, Technical Committee workshop, August 8–19, 1983, Oak Ridge, Tennessee, sponsored by the International Atomic Energy Agency. Contact: F. N. Flakus, Div. of Nuclear Safety, IAEA, P.O. Box 100, A-1400 Vienna, Austria.

PATH Gamma Shielding Code Training Course/ Workshop, August 9–11, 1983, San Diego, California. Contact: S. Su, GA Technologies, Inc., P.O. Box 85608, San Diego, CA 92138 USA; phone 619-455-2195.

8th Annual Conference of the Australian Radiation Protection Society, August 15–18, 1983, Adelaide, Australia. Contact: J. Fitch, Convenor, 1983 ARPS Conf., Private Bag 97, Glenside, S. A. 5065, Australia.

Occupational and Environment Radiation Protection, Boston Massachusetts, August 22–26, sponsored by Harvard Univ. School of Public Health. Contact: Office of Continuing Education, Harvard School of Public Health, 677 Huntington Ave., Boston, MA 02115 (617-732-1171)

Medical Planning and Care in Radiation Accidents, Oak Ridge, Tenn., August 22–26, 1983, sponsored by USDOE, Washington, DC, Contact: Robert C. Ricks, REAC/TS, Oak Ridge, Associated Universities, P.O. Box 117, Oak Ridge TN 37830 (615-576-3131).

Effects of Heat From Radioactive Waste in Deep Geological Repositories, August 29–September 2, 1983, Sweden. Contact: V. Tsyplenkov, Div. of Nuclear Fuel Cycle, IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Computational Aspects of the Finite Element Method, Aug. 29–30, 1983, Chicago, Ill., Contact: J. F. Gloudeman, MacNeal-Schwendler Corp., 815 Colorado Blvd., Los Angeles, CA 90041 (213-258-9111) or Miriam L. Holden, Director, Conferences, Argonne National Laboratory, Argonne, IL 60439.

September 1983

International Conference on Numerical Methods in Nuclear Engineering, September 6–9, 1983, Montreal, Quebec, Canada, sponsored by the Nuclear Science and Engineering Division, Canadian Nuclear Society. Contact: Riccardo A. Bonalumi, Nuclear Studies & Safety Dept., H16 H17, Ontario Hydro, 700 University Ave., Toronto, Ontario, Canada M5G 1X6 (416-592-7026).

Handling of Radiation Accidents by Emergency Personnel, Oak Ridge, Tenn., Sept. 13–16, 1983, sponsored by USDOE, Washington, DC, Contact: Robert C. Ricks, REAC/TS, Oak Ridge, Associated Universities, P.O. Box 117, Oak Ridge TN 37830 (615-576-3131).

Health Physics in Radiation Accidents, Oak Ridge, Tenn., Sept. 19–23, 1983, sponsored by USDOE, Washington, DC, Contact: Robert C. Ricks, REAC/TS, Oak Ridge, Associated Universities, P.O. Box 117, Oak Ridge TN 37830 (615-576-3131).

3rd Topical Meeting on Fusion Reactor Materials, September 19–22, 1983, Albuquerque, New Mexico, sponsored by Department of Energy, the American Nuclear Society, and the Nuclear Metallurgy Committee of the TMS/AIME. Contact: M. J. Davis, Sandia National Laboratory, Dept. 1830, P.O. Box 5800, Albuquerque, New Mexico 87185, phone 505-844-4164.

11th Regional Congress of the International Radiation Protection Association: Recent Developments and Trends in Radiation Protection, September 20–24, 1983, Vienna, Austria, co-sponsored by the Austrian Association for Radiation Protection. Contact: A. Hefner, Congress Secretary, c/o Österreichischer Verband für Strahlenschutz, Lenaugasse 10, A-1082 Vienna, Austria.

Fall Meeting of the Atomic Energy Society of Japan, September 28–30, 1983, Hokkaido, Japan. Contact: M. Masamoto, Secretary General, Atomic Energy Society of Japan, No. 1-5-4 Ohte-machi, Chiyoda-ku, Tokyo, 100 Japan.

October 1983

Environmental Transfer to Man of Radionuclides Released from Nuclear Installations, a seminar October 17–21, 1983, Brussels, Belgium, sponsored by the International Atomic Energy Agency, Contact: Conference Service Section, IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Nuclear Facilities Operator Training Topical Meeting, October 19–21, 1983, in Madrid, Spain, sponsored by the Spanish Nuclear Society and European Nuclear Society, Contact: Enrique Ugendo, Sociedad Nuclear Espanol, Estebanez, Calderon 7-9 F, Madrid, Spain.

Transport of Radioactive Materials by Post, a seminar October 24–27, 1983, in Vienna, Austria, sponsored by the International Atomic Energy Agency. Contact: Conference Service Section, IAEA, P.O. Box 100, A-1400 Vienna, Austria.

American Nuclear Society Winter Meeting, San Francisco, Calif., October 30–Nov. 4, 1983, sponsored by the American Nuclear Society, Contact: David Pettengill, ANS, 555 N. Kensington Ave., LaGrange Park, IL 60525 (312-352-6611).

November 1983

Seminar on Effective Utilization and Management of Research Reactors, Kuala Lumpur, Malaysia, Nov. 7–11, 1983, sponsored by the International Atomic Energy Agency, Vienna, Austria, Contact: IAEA, PO Box 100, Vienna, International Centre, A-1400 Vienna, Austria.

Radiation Protection in Exploration, Mining and Milling of Radioactive Ores for Developing Countries in Africa, a seminar, November 14–25, 1983, in Gabon, sponsored by the International Atomic Energy Agency. Contact: Conference Service Section, IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Fifth National Symposium on Radiation Physics, November 21–24, 1983, Calcutta, India, sponsored by the Indian Society for Radiation Physics in collaboration with different universities and national laboratories. Contact: G. Muthukrishnan, Variable Energy Cyclotron Centre, 1/AF, Bibhan Nagar, Calcutta-700064.

Technical Committee on Decontamination of Nuclear Facilities to Permit Plant Decommissioning, Modification or Maintenance, November 28–December 2, 1983, Vienna, Austria, sponsored by the International Atomic Energy Agency. Contact: S. Mukai, Div. of Nuclear Fuel Cycle, IAEA, P.O. Box 100, A-1400 Vienna, Austria.

JULY 1984

Fission Product Behavior & Source Term Research, July 15–19 1984, Snowbird, Utah, sponsored by Idaho Section of the American Nuclear Society, EPRI, Canadian Nuclear Society, and Atomic Energy Society of Japan. Contact: W. J. Quapp, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, Idaho 83415 (208-526-9606).

October 1984

Clinical Radiophysics, a symposium sponsored by the Clinical Radiophysics Section of the Society for Medical Radiology of the German Democratic Republic, October 28–November 1, 1984, Binz (island Rügen, German Democratic Republic). Contact: Dr. sc. techn. Manfred Tautz, 1115 Berlin-Buch, Wiltbergrstrasse 50, Städtisches Klinikum Buch, Spezialabteilung Strahlenphysik, German Democratic Republic.

November 1984

National Conference on Biomedical Physics and Engineering November 3–4, 1984, in Sofia, Bulgaria, sponsored by the Bulgarian National Society of Biomedical Physics and Engineering. Contact: Chair of Physics and Biophysics, c/o eng. Peter Trindev, Medical Academy - Base No. 1, 1431 Sofia / 1 Boul.G.Sofiiski, Bulgaria.

JUNE 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

BNL-NCS-51635 Review of Panel on Reference Nuclear Data Surveys and Discussions on Reference Nuclear Data Needs., . . Burrows, T.W., . . October 1982, . . NTIS

CONF-800304, pp.907-910 Neutron Spectra and Dose Equivalent Inside Reactor Containment., . . Endres, G.W.R.; Faust, L.G.; Brackenbush, L.W.; Griffith, R.V., . . 1980, . . Oxford. Pergamon Press, . . Fifth Congress of the International Radiation Protection Society on Radiation Protection, Jerusalem, Israel, March 1980

CONF-810831, Pt.1 and Pt.2 Fusion Reactor Materials: Proceedings of the Second Topical Meeting on Fusion Reactor Materials, Seattle, Washington, August 9-12, 1981., . . 1981, . . Amsterdam. North-Holland

CONF-811040-201 Neutronic Analysis of Graphite-Moderated Solid Breeder Design for INTOR., . . Jung, J.; Abdou, M.A., . . 1981, . . NTIS, PC A02/MF A01

CONF-811046-19 First-Wall and Blanket Engineering Development for Magnetic-Fusion Reactors., . . Baker, C.; Herman, H.; Maroni, V.; Turner, L.; Clemmer, R.; Finn, P.; Johnson, C.;Abdou, M. Abdou, M., . . 1981, . . NTIS, PC A03/MF A01

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CONF-820802-53 Volatile Fission-Product Source Term Evaluation Using the FASTGRASS Computer Code., . . Rest, J., . . August 1982, . . NTIS, PC A02/MF A01

CONF-820942-29 Investigation of the Prompt-Neutron Spectrum for Spontaneously-Fissioning ^{252}Cf., . . Poenitz, W.P.; Tamura, T., . . 1982, . . NTIS, PC A02/MF A01

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CONF-830406-Absts. Fifth Topical Meeting on the Technology of Fusion Energy., . . April 1983, . . NTIS, PC A24/MF A01

CONF-830406-38 Neutron Activation in EBT-P., . . Driemeyer, D.E., . . 1983, . . NTIS, PC A02/MF A01

DOE/ET-51013-65; MIT-PFC/RR-83-3 D-D Fusion Neutron Spectra Measurements and Ion Temperature Determination at ALCATOR C., . . Fisher, W. A., . . February 1983, . . NTIS

EGG-PHYS-6201 Radiation-Shielding Calculations for the UPTF Gamma-Ray Densitometer., . . Grimesey, R.A.; Tomberlin, T.A., . . March 1983, . . NTIS, PC A02/MF A01

GKSS-82/E/22 Theoretical Neutron Spectrum of a 14 MeV Neutron Tube with Cylindrical Ion Acceleration Structure., . . Bahal, B.M.; Fanger, H.U., . . 1982, . . NTIS (U.S. Sales Only), PC A04/MF A01

IAEA-TECDOC-231, pp.539-547 High Order Discrete Ordinates Transport in Two Dimensions., . . Arkuszewski, J.J., . . Specialists' Meeting on Homogenization Methods in Reactor Physics, Lugano, Switzerland, 13-15 November 1981, . . May 1980, . . IAEA, Vienna

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