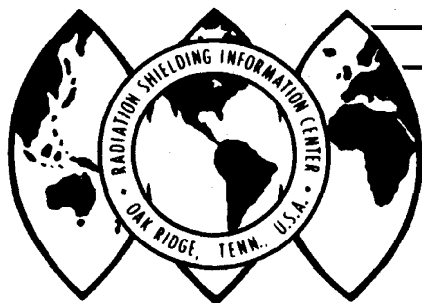


RSIC Newsletter



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

Phone No. 615-574-6176 or FTS 624-6176
EasyLink Mailbox: 62813374
Telex(Answer Back): 854467(ORNL EPIC UD)
(For RSIC TELEX Communication Only)

No. 284

July 1988

To-day's pioneers are building to-morrows's progress.—Thomas J. Watson

CHANGES IN THE COMPUTER CODE COLLECTION

Seven changes were made to the computer code collection during the month. Three new code systems were packaged and added to the collection, an existing code package was replaced with a newly-frozen version, and three code packages were updated to improve or correct performance. One change resulted from a foreign contribution.

CCC-467/ITS

Sandia National Laboratories, Albuquerque, New Mexico, the original contributors of this integrated TIGER code system, has advised us of the need for a simple correction to the program library. The statement in SUBROUTINE ESCORE

$FLAMB = (CCLAN * EARL BX + CBLAN) * EARL BX + CALAN$
must be replaced by

$FLAMB = CBLAN * EARL BX + CALAN$

This statement appears twice in ITS. References: Sandia National Laboratories Memo (December 1987 and April 1987), SAND 84-0573 (November 1984), and Informal Report (1988). FORTRAN-77; CRAY, CYBER-76, IBM, CRAY-1, VAX.

CCC-526/IONMIG

This code system for calculating far-field transport of decaying radionuclides through a porous medium by diffusion and convection was contributed by Sandia National Laboratories, Albuquerque, New Mexico. IONMIG was developed in

support of the U. S. Subseabed Disposal program. For user-specified velocity and temperature fields, the convection-diffusion equation is solved in a sorbing porous medium. The sorption may be a function of species type, concentration, vertical position, and local temperature. The formulation used is applicable to two-dimensional planar or axisymmetric geometries. The Fortran 77 code, which has run on CRAY, VAX, CDC and IBM computers, requires the International Mathematical and Statistical Library software. Reference: SAND83-1276. Fortran 77; CRAY, VAX, CDC and IBM.

PSR-125/GNASH

A newly-frozen version of this pre-equilibrium, statistical nuclear-model code system for calculation of cross sections and emission spectra was contributed by the original developers at Los Alamos National Laboratory, New Mexico. GNASH provides

IF YOU CHANGE YOUR ADDRESS, please notify us (including Building and Room No. where needed). *Third Class Mail* is returned to us at our expense if the addressee has moved. If your mail is returned, your name will be deleted from our distributions until we hear from you.

a flexible method by which reaction and level cross sections, isomer, ratios and emission spectra resulting from particle-induced reactions can be calculated. Fission treatment is included in this version, and additional level density options are available. References: LA-6947 (November 1977) and Informal Notes (1988). FORTRAN 77; CRAY.

PSR-171/NJOY87

This code system for producing pointwise and multigroup neutron and photon cross sections from ENDF/B evaluated nuclear data was updated to correct the ENDF/B-IV plutonium data RSIC added when packaging the 1987 version of the code. The modification requires a change in the value of LF for the secondary energy distribution law in MF=5 on card 993 from 9 (evaporation spectrum) to 7 (simple fission spectrum or Maxwellian). The need for this correction was brought to our attention by the Advanced Reactor Development Division of the Atomic Energy of Canada Limited Research Company, Chalk River, Ontario. References: LANL Memo T-2-L-10991 (June 1987), LA-9303-M (ENDF-324), Vol. I (May 1982), Vol. II (May 1982), Vol. III (October 1987), Vol. IV (December 1985), and Informal Notes (November 1987). FORTRAN 77; CDC, CRAY, IBM, VAX.

PSR-211/EVALPLOT

This code package for plotting cross sections in the ENDF/B format was extended with a list of changes needed to run on VAX computers under VMS. The University of New Mexico, Albuquerque, contributed a list of the first few lines of the MAIN program which require modification. Users may request a listing of these changes. Reference: UCRL-50400, Vol. 17, Part E and Informal Notes. Fortran IV; IBM, VAX.

PSR-261/MICAP

This continuous-energy Monte Carlo code system for analysis of ionization chamber responses was contributed by Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee. MICAP determines the response of a gas-filled cavity ionization chamber or other detector type in a mixed neutron and photon radiation environment. In particular, MICAP determines the neutron, photon, and total response of the detector system. MICAP encompasses all aspects of mixed field dosimetry analysis including detector design, pre-experimental planning and post-experimental analysis. Nine individual codes are included. The transport modules utilize combinatorial geometry to accurately model the source/detector geometry and also use continuous energy and angle cross section and material data to represent the materials for a particular problem. Input cross section processors are incorporated to eliminate restrictions in the modeling capability of the code system with respect to geometry, physical processes, nuclear data and sources. Reference: ORNL/TM-10340 (January 1988). Fortran IV; IBM 3033.

PSR-267/SCINFUL

This Monte Carlo based computer program to determine a scintillator full energy response to neutron detection was contributed by ORNL. SCINFUL uses a few programming techniques of its parent program, PSR-014/O5S, and includes several new features. It provides a calculated full response anticipated for either a cylindrical NE-213 (liquid) scintillator or an NE-110 (solid) scintillator. The incident design neutron energy range is 0.1 to 80 MeV. The program may also be used to compute angle-integrated spectra of charged particles following neutron interaction with ^{12}C . Reference: ORNL-6462 (March 1988) and ORNL-6463 (April 1988). Fortran 77; VAX.

CHANGES TO THE DATA LIBRARY COLLECTION

Two data libraries were extended to facilitate data access.

DLC-80/DRALIST

This package of radioactive decay data for application to radiation dosimetry and radiological assessments was updated with the addition of an interactive VAX version of MEDPRINT contributed by EG&G Energy Measurements, Inc., Goleta, California. MEDPRINT reads and selectively lists data available in MEDLIST format. References: DOE/TIC-11026 (1981) and Informal Notes. IBM-3033 and VAX.

DLC-88D/TPASGAM85

This package of radioactive decay data of gamma-ray energies and branching ratios was extended with the addition of another retrieval program. EG&G Energy Measurements, Inc., Goleta, California contributed an interactive VAX program called TPASLIST which reads the data file ordered by energy and lists data for selected nuclides. References: Informal Notes (1985). IBM-3033 and VAX.

ANS Divisions Elect Officers

The spring elections gave the following results in those divisions of interest to the radiation shielding and transport community.

Radiation Protection & Shielding—Chair, *William J. Johnson*; vice chair, *Joseph M. Cardito*; secretary, *Don McClure*; treasurer, *Bill Hoskins*; executive committee, *Jacob Celnik*, *Nolan E. Hertel*, and *Bernard W. Wehring*; continuing EC members, *Leland J. Carter*, *Margaret Emmett*, *Arnold Fero*, *Jess Greenborg*, *J. Kenneth Shultis*, and *Mark L. Williams*.

Mathematics & Computation—Chair, *Cyrus H. Adams*; vice chair, *Jack E. Olhoeft*; secretary, *Walter L. Weaver*; treasurer, *Stephen L. Rottler*; executive committee, *Thomas J. Downar* and *William R. Martin*; continuing EC members, *Forrest B. Brown*, *Alain Kavenoky*, *Paul J. Turinsky*, *Eugene L. Wachspress*, *Wallace F. Walters*, and *Brian A. Worley*.

Fusion Energy—Chair, *Carl D. Henning*; vice chair, *Norman A. Uckan*; secretary/treasurer, *Ralph W. Moir*; executive committee, *Donald J. Dudziak* and *Steven J. Piet*; continuing EC members, *Edward T. Cheng*, *William J. Hogan*, *John P. Holdren*, *Donald J. Grove*, *Gregory A. Moses*, *Francois G. Prevot*, *John Sheffield*, and *Don Steiner*.

Reactor Physics—Chair, *Richard J. Cacciapouti*; vice chair, *Paul W. Dickson*; secretary, *Mickey Killgore*; treasurer, *Roger O. Anderson*; executive committee, *Frank McDonnell*, *Yuri Orchewa*, *Kord Smith*, and *Toshikazu Takeda*; continuing EC members, *James W. Daughtry*, *Judson Hardy*, *James A. Lake*, *Bernard I. Spinard*, and *Armando Travelli*.

Nuclear Criticality Safety—Chair, *Calvin M. Hopper*; vice chair, *Richard A. Libby*; secretary/treasurer, *Linda Capano-Dolan*; executive committee, *C. L. Brown*, *Bruce Ernst*, and *Alan H. Wells*; continuing EC members, *Warner A. Blyckert*, *Kenneth Elliott*, *David L. Honkonen*, *William T. Mee*, *John T. Mihalcz*, and *Norman L. Pruvost*.

SHIELDING PUBLICATIONS

Current publications of interest to the radiation shielding, protection, and transport community are summarized below.

NRPB Releases 1987 Case Studies

The National Radiological Protection Board (NRPB) has released a report in which 25 cases of suspected overexposure to ionizing radiation, referred to NRPB for investigation by cytogenetic analysis, are summarized. The chromosome data are compared with information from physical dosimetry and, a brief summary is given of the circumstances of each case. The report, entitled *Doses in Radiation Accidents Investigated by Chromosome Aberration Analysis. XVIII: A Review of Cases Investigated, 1987*, by D. C. Lloyd *et al*, is available from HMSO, P.O. 276, London SW8 5DT. Specify ISBN 0 85951 301 7 on the order.

NCRP Releases Five Publications

The National Council on Radiation Protection (NCRP) has released five publications on radiation exposure and risk assessment. Report Nos. 92 and 94 are the first in a series which provides detailed information on population exposures summarized in NCRP Report No. 93, also described below.

NCRP Report No. 92, *Public Radiation from Nuclear Power Generation in the United States*, is the first in a series which provides detailed information on the population exposures summarized in Report No. 93. Estimates of exposures arising from the entire light water reactor nuclear fuel cycle are presented. Dose estimates are calculated for individuals in the general population and for the population within eighty kilometers of facilities typical of those in operation in the nuclear fuel cycle. Each process in the cycle is presented in sufficient detail to provide an understanding of the sources and magnitudes of radiations and radionuclides involved. Annual release rates of radionuclides to air and water and the resulting radiation doses are given for exposures arising from mining, milling and refining, uranium hexafluoride production, enrichment, fuel fabrications, power generation, fuel reprocessing, low-level waste, spent-fuel storage, high-level waste and transportation.

NCRP Report No. 93, *Ionizing Radiation Exposure of the Population of the United States*, is the first comprehensive statement on the total exposure of the U.S. population from all sources of ionizing radiation on the basis of a common unit, the effective dose equivalent. Six main source categories are considered: natural radiation, occupational, nuclear fuel cycle, consumer products, miscellaneous environmental sources, and medical diagnosis and therapy.

NCRP Report No. 94, *Exposure of the Population in the United States and Canada from Natural Background Radiation*, supercedes NCRP Report No. 45, published in 1975. The new report adds information developed in the last decade and extends the geographic span to include data from Canada. Natural radiation and radiation in the environment provide the major source of human radiation exposure, a major consideration in the overall assessment of population exposure. The report provides descriptive material and data summarizing available information on the levels of natural radiation in the environment, the consequent average exposures and radiation doses to the population, and, when possible, the distribution or variability of these factors. The report covers cosmic radiation, cosmogenic radioactivity, radionuclides in the earth, external terrestrial radiation, inhaled radionuclides, internally deposited radionuclides, and unusual exposures. An appendix provides information on fallout from nuclear weapons tests.

NCRP Report No. 95, *Radiation Exposure of the U.S. Population from Consumer Products and Miscellaneous Sources*, supercedes NCRP Report No. 56, published in 1977. The report evaluates exposures from ionizing radiation emitted by consumer products, such as television receivers, airport luggage inspection systems, radioluminous

products, building materials, glass and ceramics, and miscellaneous sources such as high voltage vacuum electronic units. Exposures resulting from radioactive waste and transport are also covered. The report includes recommendations for dose reduction.

Lauriston S. Taylor Lecture No. 11, *How to be Quantitative About Radiation Risk Estimates*, by Seymour Jablon, is the eleventh Lauriston S. Taylor lecture in the series honoring the founding president of the NCRP.

Individuals and organizations on the NCRP Standing Order List will receive copies of Report Nos. 92, 93, 94, and 95 automatically. The lecture is not included and must be ordered separately. Individuals may make purchases or place their names on the Standing Order List by directing an order to: NCRP Publications, 7910 Woodmont Ave., Suite 1016, Bethesda, Maryland 20814 (phone 301-657-2652).

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.

NBS Staffers Join International Journal

Two new appointments to the editorial staff of the *International Journal of Radiation Applications and Instrumentation Part A* have been made from the National Bureau of Standards. **W. L. McLaughlin** will serve as Editor-in-Chief for North America, replacing **W. B. Mann** who will serve as emeritus consultant. **J. H. Hubbell** will serve on the editorial staff.

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: **Roy R. Culp**, Arkansas Technical University, Russellville; **Jan Kormicki**, Vanderbilt University, Nashville, Tennessee; **John D. Morrow** and **Joe Pyun**, FMC Corp., San José, California; **Paula I. Uotila** and **Stig A. Larsson**, Swedish State Power Board; **Gerard DeJonghe** and **Jean Gonnord**, CEA, Saclay, France; and **Cathy Eyberger**, Argonne National Laboratory, Illinois.

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.

REAC/TS Sponsors Accident Preparedness Conference

The Radiation Emergency Assistance Center/Training Site (REAC/TS) is sponsoring the *2nd International REAC/TS Conference on the Medical Basis for Radiation Accident Preparedness: Clinical Experience and Follow-up Since 1979*, to be held October 20-22, 1988, in Oak Ridge, Tennessee. The conference covers clinical experience and response planning in the context of accidents which have occurred since the first conference in 1979, including the Chernobyl and Brazilian accidents. The conference fee is \$200. Further information may be obtained from REAC/TS Conference, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 USA.

CALLS FOR PAPERS

Advances in Nuclear Engineering Computation and Radiation Shielding is a topical meeting sponsored by the Mathematics & Computation (M&C) and the Radiation Protection & Shielding (RP&S) Divisions of the American Nuclear Society (ANS). The meeting will be held April 9-13, 1989, in Santa Fe, New Mexico. Papers on the following topics are solicited: Deterministic Neutral & Charged Particle Transport Methods and Applications, Monte Carlo Neutral & Charged Particle Transport Methods and Applications, Computational Thermal Radiation Transport Methods, Diffusion Theory and Kinetics, Radiation Shielding Design and Analysis, Computational Fluid Dynamics and Thermal Hydraulics, Evaluated and Processed Nuclear Data for Shielding Applications, Radiation Protection Management, Innovative Applications of Advanced Computers and Architecture, and On-Line Reactor Simulation. The deadline for receipt of 800-1200-word summaries is **August 15, 1988**. Information may be obtained from E. W. Larsen, Technical Program Chairman, Group X-6, MS B226, Los Alamos National Laboratory, Los Alamos, NM 87545 USA (phone 313-936-0124).

Fifty Years with Nuclear Fission is the title of a conference commemorating fifty years of research on and the application of the fission process. The conference, sponsored jointly by the ANS and the National Bureau of Standards with co-sponsorship provided by the American Chemical Society and the American Physical Society, will be held April 26-28, 1989, in Gaithersburg, Maryland. The conference will feature a summary of progress by outstanding contributors and presentations of current research and applications. Organization will be around the following topics: Fission Theory, Experiments in Support of Theory, Instrumentation, Fission Applied Data, Astrophysical and Space Applications, Fission By-Products

in Biology and Medicine, Industrial Fission By-Product Applications, Reactor Design and Development, Safeguards, Peaceful Uses of Fission Technology, and Applications in General Research and Development. The summary deadline is **October 1, 1988**. Information on the summary requirements may be obtained from Jan Hauber, Room B109, Bldg. 245, National Bureau of Standards, Gaithersburg, MD 20899.

The International Symposium on Nuclear Decay Data: Spectrometric Methods, Measurements, and Evaluations will be held June 6-8, 1989, at the Physikalisch-Technische Bundesanstalt in Braunschweig, Federal Republic of Germany. It is sponsored by two working groups of the International Committee for Radionuclide Metrology (ICRM), the Gamma- and Beta-Ray Spectrometry Group and the Non-neutron Nuclear Data Group. The increasing use of radionuclides requires reasonable measurement techniques as well as measurement standards for the calibration of instruments and the assay of radionuclidic content. Standards should be accurate and traceable to national standards. Papers on the following topics are requested: Measurements of Decay Data, Evaluations of Decay Data, Measurement Techniques, and Calibration Sources. The symposium will include discussion of detection limits in gamma-ray spectroscopy, nonstatistical fluctuations in peak areas in gamma-ray spectra, new measurements of gamma-emission probabilities for ^{75}Se , x- and gamma-ray emission standards for detector calibration, and evaluations of ^{90}Sr and ^{137}Cs half-life measurements. Papers should be submitted by **December 1, 1988**, to either R. G. Helmer, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415 USA, or A. L. Nichols, 102/A50, Chemistry Division, AEE Winfrith, Dorchester, Dorset, DT2 8DH, United Kingdom.

Calendar

Your attention is directed to the following events of interest.

July 1988

Review of Progress in Quantitative Nondestructive Evaluation, July 31-Aug. 5, 1988, La Jolla, California, sponsored by U.S. DOE, Ames Laboratory, and Wright Aeronautical Laboratory. Contact: D. O. Thompson, Ames Laboratory, Iowa State University, Ames, IA 50011 (phone 515-294-8152).

August 1988

Monte Carlo Analysis, Aug. 15-19, 1988, a short course sponsored by the University of Tennessee College of Engineering, Knoxville, Tennessee. Contact: T. W. Kerlin, Head, Nuclear Engineering Dept., The University of Tennessee, Knoxville, TN 37996-2000 (phone 615-974-2525).

Computational Methods in Reactor Analysis, Aug. 15-19, 1988, a short course sponsored by the University of Tennessee College of Engineering, Knoxville, Tennessee. Contact: T. W. Kerlin, Head, Nuclear Engineering Dept., The University of Tennessee, Knoxville, TN 37996-2000 (phone 615-974-2525).

International Reprocessing and Waste Management Symposium, Aug. 21-24, 1988, Denver, Colorado, sponsored by the American Inst. of Chemical Engineers. Contact: Wayne Freeby, Bechtel National, Inc., Fifty Beale St., San Francisco, CA 94119.

Annual DOE Low-Level Waste Management Conference, Aug. 30-Sept. 1, 1988, Denver, Colorado. Contact: Marjorie Clearwater, Idaho National Engineering Laboratory, P.O. Box 1625, Idaho Falls, ID 83415 (phone 208-526-9197 or FTS 583-9197).

September 1988

Industrial Radiation and Radioisotope Measurement Applications, Sept. 6-8, 1988, Pinehurst, North Carolina, a topical meeting sponsored by the Isotopes and Radiation Division of the ANS. Contact: Robin P. Gardner, General Chairman, or Kuruvilla Verghese, Tech. Program Chairman, North Carolina State Univ., School of Engineering, Box 7909, Raleigh, NC 27695-7909.

International Topical Meeting on Waste Management: SPECTRUM '88, Sept. 11-15, 1988, Pasco, Washington. Contact: Bill Bonner, Pacific Northwest Laboratory, P.O. Box 999, Richland, WA 99352 (phone 509-376-5451 or FTS 444-5451).

7th International Conference on Radiation Shielding (ICRS), Sept. 12-16, 1988, Bournemouth, United Kingdom, sponsored by the OECD Nuclear Energy Agency and the UK Atomic Energy Agency. Contact: A. K. McCracken, UKAEA Winfrith, Dorchester, Dorset, DT2 8DH, UK or Leo LeSage, Argonne National Laboratory (ANL), Argonne, IL 60439 (phone 312-972-6048).

International Reactor Physics Conference, Sept. 18-21, 1988, Jackson Hole, Wyoming, sponsored by the ANS. Contact: Mike Lineberry, ANL, P.O. Box 2528, Idaho Falls, ID 83403 (phone 208-526-7434).

International Conference on Disposal of Radioactive Waste in Seabed Sediments, Sept. 20-21, 1988, Oxford, U.K., sponsored by the Society for Underwater Technology. Contact: Jean Pritchard, SUT, 1 Birdcage Walk, London SW1H9JJ, U.K. (phone 01-222-8658).

11th International CODATA Conference, "Scientific and Technical Data in a New Era", Sept. 26-29, 1988, Karlsruhe, Fed. Rep. of Germany. Contact: DECHEMA, ATTN: CODATA Conference, P.O. Box 97 01 46, D-6000 Frankfurt/M. 97, Fed. Rep. of Germany (phone 069 7564 241/242/243; Telex: 412490 dcha d.).

October 1988

4th International Symposium on Radiation Physics (ISRP-4), Oct. 3-7, 1988, São Paulo, Brazil. Contact: Prof. Ivan Cunha Nascimento, ISRP-4 Chairman of the Organizing Committee, Inst. de Física-Universidade de São Paulo, Caixa Postal 20516 (TELEX: 011-37920 IF SP -1498-São Paulo-SP-Brazil).

4th Annual DOE Model Conference, Oct. 3-7, 1988, Oak Ridge, Tennessee. Contact: Cynthia Kendrick, ORNL, P.O. Box 2008, Oak Ridge, TN 37831-6029 (phone 615-576-2632 or FTS 626-2632).

Fundamentals of Nondestructive Assay of Nuclear Material, Oct. 3-7, 1988, Los Alamos, New Mexico, sponsored by the U.S. Dept. of Energy. Contact: Linda Robinson, LANL, Los Alamos, NM 87545 (phone 505-667-5258 or FTS 843-5258).

International Symposium on the Feedback of Operational Safety Experience from Nuclear Power Plants, Oct. 3-7, 1988, Vienna, sponsored by the IAEA. Contact: IAEA, Conference Service Section, P.O. Box 100, A-1400 Vienna, Austria.

8th Topical Meeting on Technology of Fusion Energy, Oct. 9-13, 1988, Salt Lake City, Utah. Contact: Clyde R. Toole, EG&G Idaho, P.O. Box 1625 (WCB-W3), Idaho Falls, ID 83415.

30th Annual Meeting of the American Society for Therapeutic Radiology and Oncology, Oct. 9-14, 1988, New Orleans. Contact: ASTRO, 1891 Preston White Drive, Reston, VA 22091 (phone: 703-648-8900).

12th International Symposium on the Scientific Basis for Nuclear Waste Management, Oct. 10-13, 1988, Berlin, sponsored by the Materials Research Society. Contact: Helga Fuchs, Hahn-Meitner-Institute GmbH, Glienicke Strasse 100, D-1000 Berlin 39, FRG (phone 49 30 8009 2291).

IMEchE International Conference on Decommissioning of Major Radioactive Facilities, Oct. 11-12, 1988, London, sponsored by the Institution of Mechanical Engineers. Contact: Conference Dept. C376, Inst. of Mechanical Engineers, 1 Birdcage Walk, Westminster, London SW1H 9JJ, United Kingdom.

12th International Conference on Plasma Physics and Controlled Nuclear Fusion Research, Oct. 12-19, 1988, Nice, France, sponsored by the IAEA. Contact: IAEA, P.O. Box 100 A-1400, Vienna, Austria.

5th National Conference on Biomedical Physics and Engineering, Oct. 15-17, 1988, Sofia, Bulgaria. Contact: M. Markov, Department of Biophysics, Biological Faculty, Sofia University, 8, Dragan Tzankov Blvd., Sofia 1000, Bulgaria.

Symposium on Multi-Level Health Effects Research: Molecules to Man, Oct. 17-22, 1988, Richland, Washington, sponsored by the U.S. Dept. of Energy and Battelle Pacific Northwest Laboratories. Contact: James F. Parks, Battelle-Pacific Northwest Laboratories, P.O.

Box 999, Richland, WA 99352 (phone: 509-375-2421 or FTS 444-2421).

Meeting of the American Nuclear Society, Oct. 30–Nov. 4, 1988, Washington, D.C. Contact: ANS, Meetings Department, 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 312-352-6611).

TMI-2 Accident Materials Behavior, Oct. 30–Nov. 4, 1988, Washington, D. C., sponsored by the American Nuclear Society. Contact: Gregory R. Eidam, TMI Nuclear Plant, P.O. Box 480, Middletown, PA 17057 (phone 717-948-8000).

2nd Conference on Radiation Protection and Dosimetry, Oct. 31–Nov. 3, 1988, Orlando, Florida, sponsored by ORNL. Contact: C. S. Sims, ORNL, P.O. Box 2008, Oak Ridge, TN 37831-6379.

November 1988

Gamma-Ray Assay of Nuclear Materials, Nov. 28–Dec. 2, 1988, Los Alamos, New Mexico, sponsored by the U.S. Dept. of Energy. Contact: Linda Robinson, LANL, Los Alamos, NM 87545 (phone 505-667-5258 or FTS 843-5258).

January 1989

6th Symposium on Space Nuclear Power Systems, Jan. 9–12, 1989, Albuquerque, New Mexico,

sponsored by the Univ. of New Mexico. Contact: Mohamed El-Genk, The Inst. for Space Nuclear Power Studies, Univ. of New Mexico, 237 Faris Engineering Center, Albuquerque, NM 78131 (phone 505-277-2813).

April 1989

Advances in Nuclear Engineering Computation and Radiation Shielding, Apr. 9–13, 1989, Santa Fe, New Mexico, a topical meeting sponsored by the ANS M&C and RP&S Divisions. Contact: E. W. Larsen, Technical Program Chairman, Group X-6, MS B226, Los Alamos National Laboratory, Los Alamos, NM 87545 USA (phone 313-936-0124)

June 1989

Annual Meeting of the American Nuclear Society, June 4–8, 1989, Atlanta, Georgia. Contact: ANS Meetings Dept., 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 312-352-6611).
Packaging and Transportation of Radioactive Materials: PATRAM '89, June 11–16, 1989, Arlington, Virginia, sponsored by US-DOE. Contact: Larry Blalock, Chairman, US Organizing Comm., US Dept. of Energy, P.O. Box 2001, Oak Ridge, TN 37831-8765 (phone 615-576-0945 or FTS 626-0945).

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 off-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

CEA-CONF-7950, ... *Adjoint Monte-Carlo Method with Fictitious Scattering Deep Penetration and Long-Distance Detector Calculations.*, ... Andreucci, N., ... April 1985, ... MF available from INIS.

Comunicaciones

Técnicas, Serie Naranja, No.377, ... *Finite Element Formulations of Nodal Schemes for Neutron Diffusion and Transport Problems.*, ... Del Valle, E.; Hennart, J.P.; Meade, D., ... December 1984, ... Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas; Universidad Nacional Autónoma de México

Comunicaciones

Técnicas, Serie Naranja, No.418, ... *Piecewise Continuous Methods for 1D Discrete Ordinates Transport Equations.*, ... Serrano, F.; Del Valle, E.; Hennart, J.P., ... March 1986, ... Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas; Universidad Nacional Autónoma de México

Comunicaciones Técnicas, Serie Naranja, No.421, ... *Fast Nodal Schemes for Solving the 2D X-Y Discrete Ordinates Transport Equations.*, ... Filio, C.; Del Valle, E.; Hennart, J.P., ... April 1986, ... Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas; Universidad Nacional Autónoma de México

CONF-830932, pp.722-738, ... *Improved Solution of the Integral Transport Equation Across a Plane Boundary.*, ... Milgram, M.S., ... In: International Conference on Numerical Methods in Nuclear Engineering, Montreal(Canada), 6-9 Sept.1983., ... 1983, ... American Nuclear Society, LaGrange Park, IL

CONF-830932, pp.762-782, ... *The Discrete Cones Methods for Two-Dimensional Neutral Particle Transport Problems with Voids.*, ... Watanabe, Y.; Maynard, C.W., ... In: International Conference on Numerical Methods in Nuclear Engineering, Montreal(Canada), 6-9 Sept.1983., ... 1983, ... American Nuclear Society, LaGrange Park, IL

CONF-830932, pp.986-1002, ... *Implementation of a Revised Numerical Integration Technique into QAD.*, ... De Gangi, N.L., ... In: International Conference on Numerical Methods in Nuclear Engineering, Montreal(Canada), 6-9 Sept.1983., ... 1983, ... American Nuclear Society, LaGrange Park, IL

CONF-830932, pp.1032-1040, ... *A New Angular Biasing Scheme for Deep-Penetration Problem in 3-D by Monte Carlo.*, ... Dwivedi, S.R.; Gupta, H.C.; Rastogi, B.P., ... In: International Conference on Numerical Methods in Nuclear Engineering, Montreal(Canada), 6-9 Sept.1983., ... 1983, ... American Nuclear Society, LaGrange Park, IL

CONF-851185-9, ... *ENSDF: The Evaluated Nuclear Structure Data File.*, ... Martin, M.J., ... 1985, ... NTIS, PC A02/MF A01; MF available from INIS.

DOE/IG-0253, ... *Report on Integration of Defense Waste Into the Civilian Repository Program.*, ... Layton, J.C., ... March 1988, ... USDOE Office of Inspector General, Germantown, MD

GEND-063, ... *U.S. Department of Energy Three Mile Island Research and Development Program 1987 Annual Report.*, ... EG and G Idaho, Inc., Idaho Falls, ... April 1988, ... NTIS

GSF-S-1072, ... *Axial Kerma and Dose Equivalent for Neutrons in the ICRU-Sphere.*, ... Morhart, A.; Burger, G., ... August 1984, ... Gesellschaft fuer Strahlen- und Umweltforschung m.b.H. Muenchen, Neuherberg (Germany,F.R.). Inst. fuer Strahlenschutz.

HEDL-SA-3325-FP; CONF-850933-4, ... *Measurements of the Absolute Neutron Fluence Spectrum Emitted at 0 degrees and 90 degrees from the Little-Boy Replica.*, ... Roberts, J.H.; Gold, R.; Preston, C.C., ... 1985, ... NTIS, PC A02/MF A01; MF available from INIS.

IAEA-TECDOC-345, pp.246-251, ... *Data Base and Software for Neutron Spectra Unfolding on Research Reactors.*, ... Bondars, H.J., ... August 1985, ... MF available from INIS.

ICRP Publication 51; *Annals of the ICRP, 17(2/3)*, ... *Data for Use in Protection Against External Radiation.*, ... Meinhold, C.B. (Ch.), ... 1987, ... Pergamon Press

ICRP Publication 52; *Annals of the ICRP, 17(4)*, ... *Protection of the Patient in Nuclear Medicine.*, ... Liniecki, J. (Ch.), ... 1987, ... Pergamon Press

INIS-BR-535 (In Portuguese), ... *Parameters Calculation of Shielding Experiment.*, ... Gavazza, S., ... February 1986, ... MF available from INIS.

INIS-mf-10231, pp.139-148 (In German), ... *Shielding Against the Radiation Effects of Tactical Nuclear Weapons.*, ... Hehn, G., ... 1985, ... MF available from INIS.

JAERI-1311, ... *Gamma-Ray Spectrum Data Library of Fission Product Nuclides and Its Assessment.*, ... Katakura, J.I.; Yoshida, T., ... March 1988, ... Japan Atomic Energy Research Inst., Tokyo

JAERI-M-85-017, pp.5-11 (In Japanese), ... *A Retrospective and Prospective Survey of Three Dimensional Transport Calculations.*, ... Nakahara, Y., ... March 1985, ... MF available from INIS.

JAERI-M-85-017, pp.12-26 (In Japanese), ... *Present Status of Transport Code Development Based on Monte Carlo Method.*, ... Nakagawa, M., ... March 1985, ... MF available from INIS.

JAERI-M-85-017, pp.27-46 (In Japanese), ... *Problems in Radiation Shielding Calculations with Monte Carlo Methods.*, ... Ueki, K., ... March 1985, ... MF available from INIS.

JAERI-M-85-017, pp.68-102 (In Japanese), ... *Application of a Three-Dimensional S_N Code to Shielding Calculation.*, ... Yokobori, H.; Nishimura, T., ... March 1985, ... MF available from INIS.

JAERI-M-85-017, pp.103-119 (In Japanese), ... *Development of TRITAC: A Three-Dimensional Neutron Transport Code Based on S_N Method.*, ... Yamamoto, T.; Bando, M.; Takeda, T., ... March 1985, ... MF available from INIS.

JAERI-M-85-017, pp.120-131 (In Japanese), ... *Development of Three-Dimensional Transport Code by the Double Finite Element Method.*, ... Fujimura, T., ... March 1985, ... MF available from INIS.

JAERI-M-85-017, pp.132-150 (In Japanese), ... *Development of Three-Dimensional Neutron Transport Code Based on Direct Integration Method.*, ... Sasamoto, N., ... March 1985, ... MF available from INIS.

JAERI-M-85-050 (In Japanese), ... *Shielding Analyses for Design of the Upgraded JRR-3 Research Reactor, 1. Shielding of Reactor.*, ... Ise, T.; Maruo, T.; Miyasaka, Y.; Isshiki, M.; Tani, M.; Kokusen, S.; Miyamoto, K.; Narita, H., ... April 1985, ... MF available from INIS.

JAERI-M-85-059 (In Japanese), ... *A New Approximation Method for Solving Three Dimensional Neutron Diffusion Equation by Neutron Leakage Iteration Technique.*, ... Naito, Y., ... May 1984, ... MF available from INIS.

LBL-18635, pp.63-66, ... *Radioactivity Handbook.*, ... Firestone, R.B.; Browne, E., ... In: Mahoney, J. Nuclear Science Division Annual Report, October 1, 1983-September 30, 1984., ... May 1985, ... NTIS, PC A12/MF A01

LBL-23939, ... *LATTICE - A Beam Transport Program.*, ... Staples, J., ... June 1987, ... NTIS

N-86-14078, vp, ... *Determination of Neutron Flux Distribution by Using ANISN, a One-Dimensional Discrete S_n Ordinates Transport Code with Anisotropic Scattering.*, ... Ghorai, S.K., ... In: Horn, W.J.; Duke, M.B. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, Houston, TX., ... September 1983, ... NTIS, PC A18/MF A01

NUREG-1308, ... *Radioactive Material in the West Lake Landfill.*, ... Nuclear Regulatory

Commission, Washington, D.C. Office of Nuclear Material Safety and Safeguards., ... April 1988, ... NRC, GPO, NTIS

NUREG/CR-4836, ... *Approaches to Uncertainty Analysis in Probabilistic Risk Assessment. Final Report.*, ... Bohn, M.P.; Wheeler, T.A.; Parry, G.W., ... January 1988, ... NRC, GPO, NTIS

ORNL/TM-10444, ... *Evaluation of HFIR Pressure-Vessel Integrity Considering Radiation Embrittlement.*, ... Cheverton, R.D.; Merkle, J.G.; Nanstad, R.K. (Eds.), ... April 1988, ... NTIS, PC A13/MF A01

P-3-87-718, ... *Variations of the Gamma-Ray Yields from the Fission ^{235}U Induced by Resonance Neutrons.*, ... Gundorin, N.A., ... 1987, ... Joint Inst. for Nuclear Research, Dubna, USSR. Lab. of Neutron Physics

P-3-87-770, ... *Investigation of Neutron Reactions Followed by Charged Particle Emission (Status and Perspectives).*, ... Popov, Y.P., ... 1987, ... Joint Inst. for Nuclear Research, Dubna, USSR. Lab. of Neutron Physics

P-3-87-862, ... *Investigation of Prompt Gamma-Ray Yields as a Function of Mass and Charge of ^{236}U Fission Fragments.*, ... Bogdzal, A.A., ... 1987, ... Joint Inst. for Nuclear Research, Dubna, USSR. Lab. of Neutron Physics

SAND-87-7164, ... *WIPP Horizon Free Field Fluid Transport Characteristics.*, ... Peterson, E.W.; Lagus, P.L.; Lie, K., ... December 1987, ... NTIS

SLU-REK-64, ... *Radioactive Fission and Activation Products: Transport from Soil to Plant Under Swedish Field Conditions.*, ... Mascanzoni, D., ... 1988, ... Dept. of Radioecology, Swedish University of Agricultural Sciences, Uppsala

TRITA-PFU-87-15, ... *EXTRAP Conceptual Fusion Reactor Design Study.*, ... Eninger, J.E.; Lehnert, B., ... December 1987, ... Dept. of Plasma Physics and Fusion Research, Royal Inst. of Technology, Stockholm, Sweden

UCRL-53846, ... *Radionuclide Concentrations in Fish and Invertebrates from Bikini Atoll.*, ... Noshkin, V.E.; Wong, K.M.; Eagle, R.J., ... January 1988, ... NTIS

Ann. Nucl. Energy, 13(1), 23-36, ... *Transport Calculations of Neutron Energy Spectra in a Graphite Cylinder with a D-T Source.*, ... Ofek, R.; Goldfeld, A.; Tsechanski, A.; Shani, G., ... 1986

Ann. Nucl. Energy, 13(2), 57-62, ... *A Polynomial Nodal Model Using Legendre Expansions.*, ... Rohach, A.F., ... 1986

Ann. Nucl. Energy, 13(2), 101-106, ... *A Group by Group Upscattering Scaling Method.*, ... Scaffoni, M.M.; Abbatte, M.J., ... 1986

Appl. Radiat. Isot., 39(5), 421-427, ... *Radiation Field from a Rectangular Plaque Source: Critique of Some Engineering Approximations.*, ... Ghose, A.M.; Bradley, D.A.; Hubbell, J.H., ... 1988

Bull. Res. Lab. Nucl. React., 10, 3-10, ... *Errors Due to Energy Grouping for Monte*

Carlo Method., ... Noura, T.; Sekimoto, H.; Yamamuro, N., ... March 1985

Hazama-Gumi Kenkyu Nenpo, V.1985, 345-349 (In Japanese), ... *Fast Neutron Activation Experiment in Concrete Materials.*, ... Hara, A.; Inoue, T.; Uno, T., ... October 1985

Kernenergie, 29(7), 251-255, ... *Some Monte Carlo Activities with the MORSE-CG Code.*, ... Noack, K., ... July 1986

Med. Phys., 13(4), 533-538, ... *Calculation of Photon Dose Distributions in an Inhomogeneous Medium Using Convolutions.*, ... Boyer, A.L.; Mok, E.C., ... July 1986

Nuclear Electronics and Detection Technology, 8(1), 18-23 (In Chinese), ... *The Effects of Total Gamma Radiation Dose on the Behavior of CMOS Devices.*, ... Chen, P.; Li, B., ... January 1988

Nuclear Electronics and Detection Technology, 8(2), 65-71 (In Chinese), ... *Development of a Lithology and Density Measurement Device.*, ... Fang, J.; Shen, T.; Yang, S.; Huang, Z.; Gu, M., ... March 1988

Nucl. Sci. Eng., 99(2), 91-98, ... *Stability Analysis of Synthetic Acceleration Methods with Anisotropic Scattering.*, ... Valougeorgis, D.; Williams, M.; Larsen, E.W., ... June 1988

Nucl. Sci. Eng., 99(2), 99-108, ... *Nodal Synthesis—Consistent Nodal Approach for Global Reactor Analysis.*, ... Mackiewicz, J., ... June 1988

Nucl. Sci. Eng., 99(2), 109-117, ... *Numerical Improvements of the Exact Kernel Method in Transport Theory.*, ... Ligou, J.; Miazza, P., ... June 1988

Nucl. Sci. Eng., 99(2), 118-122, ... *On Choice of Trial Functions in Integro-Differential Variational Principles of Transport Theory.*, ... Loyalka, S.K.; Cipolla, J.W., Jr., ... June 1988

Nucl. Sci. Eng., 99(2), 123-132, ... *Application of Richardson Extrapolation to Numerical Solution of the Neutron Transport Equation.*, ... Allen, E.J., ... June 1988

Nucl. Sci. Eng., 99(2), 145-156, ... *Effects of Incoherent and Coherent Scattering on the Exposure Buildup Factors of Low-Energy Gamma Rays.*, ... Hirayama, H.; Trubey, D.K., ... June 1988

Nucl. Sci. Eng., 99(2), 157-171, ... *Integral Check on Nuclear Data of ^{232}Th with Neutron Spectra in a Thorium Pile and from a Thorium Slab.*, ... Kobayashi, K.; Kimura, I.; Mori, T., ... June 1988

Nucl. Sci. Eng., 99(2), 172-181, ... *The Accuracy of Processed Nuclear Data.*, ... Cullen, D.E., ... June 1988

Nucl. Technology, 82(1), 106-113, ... *Radiation Dose Impacts Resulting from Variations in the Transportation-Related Activities in a System for Management of Spent Nuclear Fuel.*, ... Schneider, K.J.; Pelto, P.J.; Lavender, J.C.; Dal-ing, P.M.; Fecht, B.A., ... July 1988

Phys. Med. Biol., 31(3), 291-298, ... *Dose Calculations for Irregular Fields Using Three-Dimensional First-Scatter Integration.*, ...

Boesecke, R.; Scharfenberg, H.; Schlegel, W., ... March 1986

Phys. Rev. A, 33(4), 2378-2381, ... Effect of Finite Absorber Dimensions on X-Ray Attenuation Measurements., ... Varier, K.M.; Kunju, S.N.; Madhusudanan, K., ... April 1986

Radiation Protection, 7(5), 335-340 (In Chinese), ... An Estimating Method of Organ Doses from X-Ray Diagnostic Examinations by Phantom Measurements., ... Wy, Y.; Wang, S., ... September 1987

Radiation Protection, 7(5), 376-382 (In Chinese), ... Gamma-Ray Exposure Rate from a ²³⁹Pu-Be Source., ... Yang, Y.; Deluca, P.M., Jr.; Pearson, D.W.; Attix, F.H., ... September 1987

Radiation Protection, 7(6), 414-419 & 427 (In Chinese), ... Study of Interaction Between Shale Rock and Radionuclides in the Underground Water., ... Li, Z.; Chen, S.; Wang, H.; Hou, B., ... November 1987

Senpaku Gijutsu Kenkyusho Hokoku, (Suppl.7), 1-60 (In Japanese), ... A Study on Analytical Method for a Large Shielding System with Neutron Streaming by the Monte Carlo., ... Ueki, K., ... July 1985

Thesis (In Spanish), ... Application of the Finite Element Method to Nuclear Reactor Dynamics., ... Del Valle, E., ... 1981, ... Escuela Superior de Fisica y Matematicas, Instituto Politenico Nacional, Mexico

Thesis, ... Variational Coarse Mesh Nodal Method for the Solution of Two Dimensional Neutron Transport Problems., ... Diber, I.R., ... Northwestern University, Evanston, IL, ... 1985, ... University Microfilms Order No.85-23,519

Thesis (In Spanish), ... Numerical Solution of the Neutron Transport Equations in Discrete Ordinates and Plane Geometry., ... Serrano, F., ... 1985, ... Escuela Superior de Fisica y Matematicas, Instituto Politenico Nacional, Mexico

Thesis (In Spanish), ... Application of the Synthetic Diffusion Method for the Numerical Solution of the Neutron Transport Equations in Plane Geometry., ... Valdés, J., ... 1986, ... Escuela Superior de Fisica y Matematicas, Instituto Politenico Nacional, Mexico

BOOK, V.12, Pt.a, ... TOTAL CROSS-SECTIONS FOR REACTIONS OF HIGH ENERGY PARTICLES: (INCLUDING ELASTIC, TOPOLOGICAL, INCLUSIVE AND EXCLUSIVE REACTIONS)., ... Baldini, A., ... 1988, ... Berlin; Springer-Verlag

BOOK, V.12, Pt.b, ... TOTAL CROSS-SECTIONS FOR REACTIONS OF HIGH ENERGY PARTICLES: (INCLUDING ELASTIC, TOPOLOGICAL, INCLUSIVE AND EXCLUSIVE REACTIONS)., ... Baldini, A., ... 1988, ... Berlin; Springer-Verlag

BOOK, ... NEUTRON RADIATIVE CAPTURE., ... Chrien, R.E., ... 1983, ... Elmsford, NY; Pergamon Press

BOOK (In Russian), ... MATHEMATICAL FOUNDATIONS OF TRANSPORT THE-

ORY. Vol.1. FOUNDATIONS OF THEORY., ... Ershov, Yu.I.; Shikhov, S.B., ... 1985, ... Moscow (USSR); Ehnergoatomizdat

BOOK, ... NEUTRON CROSS SECTIONS., ... Mughabghah, S.F., ... 1984, ... Orlando, FL; Academic Press

COMPUTER CODES LITERATURE

Ann. Nucl. Energy, 13(1), 23-36 DOT 4.2; NJOY

Transport Calculations of Neutron Energy Spectra in a Graphite Cylinder with a D-T Source., ... Ofek, R.; Goldfeld, A.; Tsechanski, A.; Shani, G., ... Ben-Gurion Univ. of the Negev, Beer-sheba, Israel, ... 1986

Chin. J. Comput. Phys., 3(2), 129-141 (In Chinese) DSN Method On Discrete-Collocation Method for Solving the Transport Problem with Two-Dimensional Cylindrical Geometry., ... Du, M.; You, T., ... Inst. of Applied Physics and Computational Mathematics, Beijing, China, ... June 1986

CIEMAT-596 (In Spanish) LEPS Program LEPS to Addition of Gamma Spectra from Germanium Detectors., ... Romero, L., ... Centro de Investigaciones Energeticas, Madrid, Spain, ... 1986, ... AVAIL: INIS (microfiche only)

DP-MS-87-53 KENO The Separability Approximation and Its Applications to S_n ., ... Clark, H.K., ... Savannah River Laboratory, Aiken, SC, ... 1987, ... AVAIL: NTIS; INIS (microfiche only)

ENEA-RT-TIB-86-4 VITAMIN-C; EURLIB-4 Comparison Between EURLIB-4 and VITAMIN-C Libraries with Respect to a Shielding Reference Problem., ... Borgia, M.G.; Panini, G.C.; Pescarini, M., ... ENEA, Bologna, Italy, ... 1986, ... AVAIL: INIS (microfiche only)

Energ. Nucl., 4(2), 67-75 CLUP 77 The Multigroup Collision Probability Method for the Neutron Transport in Square LWR Assemblies., ... Ciarniello, V.; Grassi, G.; Pierini, G., ... Centro Informazioni Studi Esperienze, Milan, Italy, ... 1987

ITEF-61(1986) MARS-4; MMK22 Adjoining of the MARS-4 and MMK-22 Codes for Calculating the Reaction Rates for Neutrons Produced in a Medium Under High-Energy Particle Irradiation., ... Kazaritskij, V.D., ... Gosudarstvennyj Komitet po Ispol'zovaniyu Atomnoj Ehnergii SSSR, Moscow, ... 1986, ... AVAIL: INIS (microfiche only)

Juel-2130 HETC/KFA 1; MORSE-CG; ALICE LIVERMORE 82 Monte Carlo Modelling and Comparison with Experiment of the Nuclide Production in Thick Stony Targets Isotropically Irradiated with 600 MeV Protons., ... Aylmer, D.; Herzog, G.F.;

- Kruse, T.H.; Begemann, F.; Weber, H.; Cloth, P.; Filges, D.; Dragovitsch, P.; Herpers, U.; Peiffer, F.; Stueck, R.; Theis, S.; Englert, P.; Jermaikan, A.; Vajda, S.; Klein, J.; Middleton, R.; Michel, R.; Moniot, R.K.; Signer, P.; Wieler, R.; Tuniz, C., ... Rutgers, the State University, New Brunswick, New Jersey; Kernforschungsanlage Juelich, Germany, ... May 1987, ... AVAIL: INIS (microfiche only)
- LBL-16870, 295-296 GAMUT
GAMUT, A Computer Code for Statistical Analysis of Gamma-Ray Data., ... Firestone, R.B.; Browne, E., ... August 1984, ... AVAIL: NTIS; INIS (microfiche only)
- Nucl. Mater. Manage., 16, 352-358 MGA2
MGA2: A One-Detector Code for Rapid High-Precision Plutonium Isotopic Measurements., ... Gunnink, R., ... Lawrence Livermore National Laboratory, CA, ... July 1987
- Nucl. Sci. Eng., 96(4), 290-302 DOXCY
DOXCY - A Discrete Ordinates Approximation of Neutron Transport in Heterogeneous Rod Lattices., ... Martens, H.D.; Stegemann, D., ... Technischer Überwachungs-Verein, Hannover E.V., Hannover, Germany, ... August 1987
- NUREG/CR-4887 POSTCON; CONTAIN
POSTCON: A Postprocessor and Unit Conversion Program for the CONTAIN Computer Code., ... Washington, K.E., ... Sandia National Labs., Albuquerque, NM, ... May 1987, ... AVAIL: NTIS; INIS (microfiche only)
- SAND-87-0292C CEPXS/ONETRAN; TIGERP; QUICKE2; TIGER
A Comparison of Experiment, CEPXS/ONETRAN, TIGERP, and QUICKE2 Net Electron Emission Coefficients for Various Bremsstrahlung Spectra., ... Ballard, W.P.; Lorence, L.J., Jr.; Snowden, D.P.; van Lint, W.A.J.; Beale, E.S., ... Sandia National Labs., Albuquerque, NM; Mission Research Corporation, San Diego, CA, ... 1987, ... AVAIL: NTIS; INIS (microfiche only)
- SKB-TR-87-12 GROUNDWATER COLLOIDS
Study of Groundwater Colloids and Their Ability to Transport Radionuclides., ... Tjus, K.; Wikberg, P., ... Institute for Surface Chemistry, Stockholm, Sweden; Swedish Nuclear Fuel and Waste Management Co., Stockholm, Sweden, ... March 1987, ... AVAIL: INIS (microfiche only)
- Trans. Am. Nucl. Soc., 52, 384-385
..... ETRAN; ITS; ONETRAN
Recent Developments in Discrete Ordinates Electron Transport., ... Morel, J.E.; Lorence, L.J., Jr., ... Los Alamos National Lab., NM, ... 1986
- Trans. Am. Nucl. Soc., 52, 385-387
..... HETC; FLUKA82; CASIM; MARS
Nucleon-Meson Cascade Calculations by Monte Carlo Methods., ... Alsmiller, R.G., Jr.; Alsmiller, F.S.; Gabriel, T.A.; Hermann, O.W., ... Oak Ridge National Laboratory, TN, ... 1986
- UCRL-15872-Vol. 1 SAFIRE
SAFIRE: A Systems Analysis Code for ICF (Inertial Confinement Fusion) Reactor Economics., ... McCarville, T.J.; Meier, W.R.; Carson, C.F.; Glasgow, B.B., ... TRW, Inc., Redondo Beach, CA; Lawrence Livermore National Laboratory, CA, ... January 1987, ... AVAIL: NTIS; INIS (microfiche only)
- UCRL-95895 BOUNDARY PROJECTION
Boundary-Projection Acceleration: A New Approach to Synthetic Acceleration of Transport Calculations., ... Adams, M.L.; Martin, W.R., ... Lawrence Livermore National Lab., CA, ... January 1987, ... AVAIL: NTIS; INIS (microfiche only)
- Water Res., 21(12), 1531-1539
..... SOLUTE TRANSPORT
Transport of Solutes Through Unsaturated Fractured Media., ... Dykhuizen, R.C., ... Sandia National Labs., Albuquerque, NM, ... December 1987