

# RSIC Newsletter



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*I find that a great part of the information I have was acquired by  
looking up something and finding something else on the way.—  
Franklin P. Adams*

## DIRECTORY REVIEW COMPLETE—EDITORIAL COMMENTS

The review of the responses to the most recent periodic query of the *RSIC Newsletter* distribution has been completed and the results are being tabulated. We express our appreciation to all those who responded promptly by returning the survey form attached to recent copies of the newsletter. We especially appreciate the effort of those who took the time to give us guidance, suggestions, and comments. As many of you are aware, RSIC staff members deal with individuals and not with institutions, seeking to interact with the individual in a mutually beneficial way. We consider each individual on our distribution to be a participant with RSIC in technical information exchange, contributing to the center as well as receiving from it. We try to anticipate your needs, and we need your cooperation, your collaboration, and especially your guidance to do so. We again thank you for taking the time to help us via the survey.

During the month of February, deletion letters were mailed to more than 1000 names of nonrespondents to the query. A large number of these deletion letters were undeliverable, a strong indicator of the movement of people within the industry. Since newsletters addressed to this class of individuals were not returned to us, we assume that someone other than the addressee found them useful. In many cases, the deletion letters "cued" the receiver of his/her failure to respond to the query and we are now reprocessing the late respondents!

We try not to burden our participants with paperwork, but the periodic query is mandated and is an essential mechanism for keeping the directory up to date and manageable. Since we do not charge a subscription fee for the newsletter, a sizable portion of our budget goes into its preparation and distribution. We cannot afford to mail it to dead letter boxes.

We ask that you help us to keep the directory current. If you change your field of work and no longer need the newsletter, please let us know. If you change your address, notify us immediately and, when deemed significant, bring us up to date on your activities. Such information is very useful in preparing us to serve your interests.

Because of the importance we attach to interacting with individuals, we require the name of a responsible person with each entry in our directory with corresponding telephone numbers so that we may contact that person directly as needed.

We use the newsletter to communicate with you. Please continue to maintain an awareness of requests we may make of you via this medium (such as the periodic query) and respond as feasible. Please feel free to call upon RSIC for products and services as needed and maintain an awareness of research results within your work environment that will enrich the RSIC store.

*Betty F. Maskewitz*

## CHANGES TO THE COMPUTER CODE COLLECTION

Six changes were made to the computer code collection during the month. A new code system was packaged as a result of a foreign contribution. Four existing code packages were extended with additional hardware versions, and one code package was replaced with a newly-frozen version.

### CCC-248/SWAN

This code system for analysis and optimization of fusion reactor nucleonic characteristics was extended to include a CRAY version, designated (C), contributed by the University of California at Los Angeles. FORTRAN IV; IBM 360/370 (A), CDC (B), and CRAY (C).

### CCC-307-M/QAD-CG

This combinatorial geometry version of QAD-P5A, a point kernel code system for neutron and gamma-ray shielding calculations, was extended to include an IBM PC version contributed by EG&G Idaho, Inc., Idaho Falls, Idaho. The neutron transport option has been deactivated in the PC version. FORTRAN IV; UNIVAC 1100 (A), CDC (B), IBM 360/370 (C), and PRIME 400 (D); FORTRAN 77; IBM PC (E).

### CCC-419/CRAC2

This code system for calculation of reactor accident consequences has been replaced by a newly-frozen version contributed by the original developers at Sandia National Laboratories, Albuquerque, New Mexico. The code package completely replaces the previously announced CCC-419 code package. It is a revised version of CRAC (Calculation of Reactor Accident Consequences). Significant improvements incorporated into CRAC2 include (1) an improved weather sequence sampling technique, (2) a new evacuation model, and (3) new output capabilities. Modifications were made to several CRAC models: (1) atmospheric dispersion model, (2) plume rise model, (3) precipitation scavenging model, and (4) mixing height model. In addition, data utilized by some of the models were upgraded: (1) latent cancer fatality risk factors have been changed to reflect the lifetime risk of latent cancer from radiation exposure and (2) economic data have been upgraded to reflect 1980 economic statistics for the United States. CRAC2 retained the organization, structure, and analytical capabilities of CRAC, but the added capabilities of the CRAC2 code system dictated an updated set of documentation to guide its application and use. Reference: NUREG/CR-2552 (SAND82-0342.) FORTRAN 77; IBM (A). FORTRAN IV; CDC (B).

### CCC-456/TWODANT

This two-dimensional, diffusion-accelerated neutral-particle, discrete-ordinates, transport code package was extended to include a diagonal sweep version which runs under the COS Operating System on the CRAY computer. The new version, designated (D), was contributed by the Los Alamos National Laboratory, Los Alamos, New Mexico, and is written in FORTRAN 77 language. The document of this code package was also updated to add a memorandum to Users Guide (LA-10049-M). A description of these report changes and all revisions may be requested from RSIC. The newest revisions of the document show # after the page number and are included in the package with all revisions to date. FORTRAN IV; CDC 7600 (A), IBM 370/195 and IBM 3033 (B), FORTRAN 77; VAX (C) and CRAY (D).

### CCC-473/INTERTRAN

This code system for assessing the impact from transporting radioactive material was contributed by the International Atomic Energy Agency (IAEA), Vienna, through the OECD NEA Data Bank, Gif-sur-Yvette, France. Modifications for the IBM version were recommended by the NEA Data Bank and implemented by Ontario Hydro of Canada who contributed the corrected version to RSIC. INTERTRAN calculates the radiological impact from incident-free transport and vehicular accidents involving radioactive materials. The code also handles accidents which may occur during handling operations. The overall model is subdivided into submodels: (1) Accident categorization model, (2) Material dispersibility model, (3) Atmospheric dispersion model, (4) Standard shipment model, (5) Transportation model, (6) Population density model, and (7) Health effects model. Reference: IAEA-TECDOC-287. FORTRAN 77; IBM 3081 (A) and CDC CYBER (B).

### PSR-14/O5S

This code package for Monte Carlo calculation of pulse height distributions due to monoenergetic neutrons incident on organic scintillators was extended to include a DEC PDP-10 version. The new version came from the original contributors of the code, Oak Ridge National Laboratory, and has been designated (B) version. FORTRAN IV; IBM 3033 (A) DEC PDP-10 (B).

## CHANGES TO THE DATA LIBRARY COLLECTION

The documentation for an existing data library was updated with additional material.

### DLC-99/HUGO

The document for this package of photon interaction data in ENDF/B-V format was updated by

adding pages 23.1-23.3 and 27.1-27.3 from *Data Formats and Procedures for the Evaluated Nuclear Data File, ENDF/B-V*, BNL-NCS-50496(ENDF-102), 2d ed. revised. These pages describe the format used for the data in DLC-99. Copies of the update material may be requested from RSIC.

## RP, M&C CALL FOR PAPERS

A call for papers has been issued for an international meeting on *Advances in Reactor Physics Mathematics and Computation* convening April 27-30, 1987, in Paris. Sponsors include the American Nuclear Society (ANS) Mathematics and Computation (M&C) and Reactor Physics Divisions (RP), the European Nuclear Society, the French Nuclear Energy Society (SFEN), the European Community Commission, the OECD Nuclear Energy Agency (NEA), the French Atomic Energy Commission (CEA), the Electricity of France (EDF), and the ANS France Section. This meeting, the twelfth in the series of biennial M&C Topical Meetings co-sponsored with the Reactor Physics Division, will feature current developments in the fields of computational methods for nuclear system analysis and conceptual reactor design and operating experience.

An invited session will be devoted to the use of super computers. Contributed papers are solicited for sessions on new reactor design, validation and operating experience, analysis of experiments, and the applications of expert systems. Papers are desired in the field of computational methods which deal with assembly spectrum codes, deterministic and stochastic transport calculations, diffusion theory and kinetics, numerical methods in fluid mechanics and thermal hydraulics. Poster sessions are proposed for computational benchmarks and production codes. A student paper competition will be sponsored with monetary awards.

The deadline for 700-1300-word English summaries is **September 22, 1986**; full papers (in English) are due *January 10, 1987*. English and French oral presentations are allowed with simultaneous translation provided. Full papers are not required for the poster session presentations; the proceedings will include only the summaries. The summaries for the benchmark problems should conform to the format of ANL-7416, *The Benchmark Problems Book*, and summaries for production codes should be in the form of the Computer Code Abstracts published in *Nuclear Science and Engineering*. Papers entered in the student competition should be clearly identified with the stipulation that the primary author of each paper be a student.

Send summaries to **A. Kavenoky, D.E.M.T., Centre d'Études Nucléaires de Saclay, 91191 Gif-sur-Yvette CEDEX France**; American papers may be sent to **R. Alcouffe, Los Alamos National Laboratory, P.O. Box 1663, MS-B226, Los Alamos, NM 87545 USA**.

*J. Rastoin* of CEA/CEN/Saclay DEDR, General Chairman of the Topical Meeting, is supported by *G. Malhouitre* of EDF/RNE as Co-General Chairman, *A. Kavenoky* of CEA/CEN/Saclay D.E.M.T. as the Technical Program Chairman, and by *M. Israel* of EDF/DPR, Secretary. Additional information may be secured from the secretary: *M. Israel, DPR, Electricité de France (EDF), B.P. 408, 92141 Clamart CEDEX, France*.

## 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.

**Betty F. Maskewitz**, director of the Engineering Physics Information Centers (EPIC), one of which is

RSIC, is currently (April 12-May 8, 1986) making orientation visits to several nuclear institutions in the People's Republic of China (PRC). She first participated in American Nuclear Society/Chinese Nuclear Society planning discussions related to the Sixth Pacific Basin Nuclear Conference which is to be hosted by China in 1987 in Kunming. She received invitations for installation and group visits in the areas of Chengdu, Beijing, and Shanghai prior to returning to ORNL.

**E. Linn Draper**, current president of ANS, has been named vice chairman, president, and chief operating officer of Gulf States Utilities. He had previously served as a director and vice chairman, and, before August 1985, served as executive vice president of external affairs and production. Draper came to Gulf States in 1979 from the University of Texas at Austin, where he was director of the Nuclear Engineering Program.

**Andrew C. Kadak** has been elected vice president of Yankee Atomic Electric Co. He will be responsible for the departments of nuclear engineering and safety analysis, environmental engineering, and computer services.

**John W. Landis**, senior vice president and a director of Stone & Webster Engineering Corp., was elected president of the American Society for Macro-Engineering.

ident of the American Society for Macro-Engineering.

#### Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *Barbara A. Hall* and *Alan W. Dooley*, Air Force Weapons Laboratory, Albuquerque, New Mexico; *Charles A. Sparrow*, Mississippi State Univ., Mississippi State; *Robert M. Davidson*, IEA, Coal Research, London; *Dominique Chaigne* and *Jean Gonnord*, CEA/CEN Saclay, Gif-sur-Yvette, France; *Toshiyasu Sasaki*, OECD Nuclear Energy Agency, Paris; *Zeev Shayer*, Israel Atomic Energy Commission, Tel-Aviv; and *Jack Courtney*, Louisiana State Univ., Baton Rouge, Louisiana.

### 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.

#### MORSE-CGA Workshop Offered

H&R Technical Associates, Inc. will conduct a workshop on the MORSE-CGA computer code system June 2-6, 1986, in Oak Ridge, Tennessee. The focus will be on practical applications of this version with array geometry. The workshop is designed for new users as well as for experienced users. Emphasis will be on understanding input and interpreting results. Presentations will be available on other commonly used Monte Carlo code systems such as KENO, MCNP, and TRIPOLI. Further information is available from Cathy Hodge, H&R Technical Associates, Inc., P.O. Box 215, Oak Ridge, TN 37831-0215 (phone 615-483-0248).

#### Basic Methods for Criticality Safety Analyses Workshop

The Department of Chemical and Nuclear Engineering of the Univ. of New Mexico is sponsoring a three-day workshop June 4-6, 1986, at the Four Seasons Hotel, Albuquerque, New Mexico, on the basic calculational methods in nuclear criticality safety. The purpose of the workshop is to provide an understanding of the theoretical and empirical bases for these calculational methods and their ranges of applicability. Several practical examples will be covered and a demonstration of recently developed and available PC software will be included.

The major content of the workshop will be devoted to the density analog and the limiting surface density techniques in criticality analyses. Attendees should be familiar with the major reference on the subject by Joe Thomas, *Nucl. Sci. Eng.* **62**:424 (1977). *Nuclear Criticality Safety—Theory and Practice*, by Ron Knief, also provides valuable background material.

The faculty includes *Thomas P. McLaughlin*, Los Alamos National Laboratory, *Martyn C. Evans*, British

Nuclear Fuels, *Joseph T. Thomas*, Oak Ridge National Laboratory, and *Harry F. Lutz*, Lawrence Livermore National Laboratory. For additional information contact Thomas P. McLaughlin, Los Alamos National Laboratory, P.O. 1663, Los Alamos, NM 87545.

#### ASTM-EURATOM Call for Papers Issued

The call for papers has been issued for the **6th ASTM-EURATOM Symposium on Reactor Dosimetry**. The symposium will be held at the Americana Snow King Resort in Jackson Hole, Wyoming, May 31-June 5, 1987. The American Society for Testing and Materials (ASTM) Committee E-10 on Nuclear Technology and Applications and the Commission of the European Communities sponsors this symposium approximately every two years.

The symposium will cover radiation metrology technique, data bases, and standardization. Emphasis will be on the application and requirements for radiation metrology of irradiated fuels and materials in fission and fusion technology. Papers on the following topics involving light water and fast breeder reactors, and fusion systems are sought: characterization of environments, irradiation monitoring of experiments, adjustment codes and uncertainties, benchmark fields and calibration procedures, nuclear data needs and problems, metrology techniques (new developments and improvements), radiation damage correlations and damage analysis techniques, nuclear heating and gamma-ray dosimetry, neutron and gamma-ray transport calculation, and LWR surveillance.

The symposium will be organized into oral presentations, poster sessions, and workshops. Prospective contributors are requested to submit four copies of a 300-500-word abstract by **June 15, 1986**, to both the ASTM program secretary, G. P. Lamaze, National Bureau of Standards, Bldg. 235, Gaithersburg, MD 20899

USA, and the EURATOM program secretary, H. Röttger, Joint Research Centre, Petten Establishment, HFR Division, Postbus 2, 1755 ZG Petten (N. H.), The Netherlands.

### Calendar

Your attention is directed to the following additional events of interest to the radiation shielding and protection community.

#### May 1986

*Seventh Annual Meeting of the Canadian Radiation Protection Association*, May 5-7, 1986, Quebec City, Canada. Contact: Roch Desrochers, Comm. de la santé et de la sécurité du travail, 1199 rue De Bleury, 9e étage, Montreal, Que., Canada H3B 3J1.

*Conference on the Science and Technology of Fast Reactor Safety*, May 12-16, 1986, Channel Islands, U. K. Contact: Inst. of Civil Engineers, Conference Office, 1-7 Great George St., London SWIP 3AA.

#### June 1986

*4th European Nuclear Conference (ENC-86)*, June 1-6, 1986, sponsored by the European Nuclear Society. Contact: Dr. Peter Bucher, ENC-4 Conference Secretary, ENS, P.O. Box 2613, CH-3001 Berne, Switzerland.

*26th Annual International Conference of the Canadian Nuclear Association and the 7th Annual Conference of the Canadian Nuclear Society*, June 8-11, 1986. Contact: J. A. Weller, Canadian Nuclear Association, 111 Elizabeth St., Toronto, Ontario, Canada M5G 1P7.

*Air Sampling*, June 9-13, 1986, a course sponsored by ORAU. Contact: Jo T. Tipton, Registrar, ORAU, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3434).

*Topical Meeting on the Technology of Fusion Energy*, June 15-19, 1986, Reno, Nevada, sponsored by ANS. Contact: C. D. Henning, Lawrence Livermore National Laboratory, P.O. Box 5511, L-644, Livermore, CA 94550 (phone 415-422-0235).

*ANS Annual Meeting*, June 15-20, 1986, Reno, Nevada. Contact: D. G. Pettengill, ANS, 555 N. Kensington Ave., La Grange Park, IL 60535 (phone 312-352-6611 ext. 257).

*Safe Use of Radionuclides*, June 16-20, 1986, a course sponsored by ORAU. Contact: Jo T. Tipton, Registrar, ORAU, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3434).

*13th International Symposium on the Effects of Radiation on Materials*, June 23-25, 1986, Seattle, Washington, sponsored by ASTM Committee E-10 on Nuclear Technology and Applications. Contact: F. A. Garner, Westinghouse Hanford Co., P.O. Box 1970, W/A-58, Richland, WA 99352 (phone 509-376-4136).

*4th International Conference on Emerging Nuclear Energy Systems*, June 30-July 4, 1986, Madrid, Spain, sponsored by the Spanish Nuclear Society and the Madrid Polytech Univ. Contact: G. Velarde, Madrid Univ. Polytechnica, Escuela Tecnica Superior de Ingenieros Industriales, P.O. Castellana, 80, Madrid, Spain, or Nils Diaz, School of Engineering, California State Univ., Long Beach, CA 90840 (phone 213-498-5121).

#### July 1986

*23rd International Conference on High-Energy Physics*, July 16-23, 1986, Berkeley, California. Contact: S. C. Loken, 50-137 Lawrence Berkeley Lab., Univ. of California, Berkeley, CA 94720.

*23rd Annual Conference on Nuclear and Space Radiation Effects*, July 20-23, 1986, Providence, Rhode Island, sponsored by the Nuclear and Plasma Sciences Society and the Inst. of Electrical and Electronics Engineers. Contact: Sandra Grawet, Science Applications International Corp., 2615 Pacific Coast Highway, Hermosa Beach, CA 90254 (phone 213-318-2611).

#### August 1986

*Occupational and Environmental Radiation Protection*, Aug. 11-15, 1986, a course sponsored by Harvard School of Public Health, Boston, Massachusetts. Contact: Office of Continuing Education, Dept. A, Harvard School of Public Health, 677 Huntington Ave., Boston, MA 02115 (phone 617-732-1171).

*Criticality Accident Dosimetry Training Course*, Aug. 11-15, 1986, Oak Ridge, Tenn., sponsored by ORNL. Contact: C. S. Sims, ORNL, Bldg. 7710, P.O. Box X, Oak Ridge, TN 37831 (phone 615-574-5851).

*International Nuclear Physics Conference*, Aug. 25-30, 1986, Harrogate, United Kingdom. Contact: Inst. of Physics, 47 Belgrave Square, London SW1X 8QX (phone 01-235-6111).

*8th International Conference on Solid State Dosimetry*, Aug. 26-29, 1986, St. Catherine's College, Oxford, organized by the National Radiological Protection Board, U.K. Contact: Miss L. Ashby, National Radiological Protection Board, Chilton, Didcot, Oxfordshire, U.K.

#### September 1986

*International Conference on Nuclear and Radiochemistry*, Sept. 1-5, 1986, Beijing, sponsored by the Chinese Nuclear Society and Chinese Chemical Society. Contact: Prof. Liu Yuanfang, Dept. of Technical Physics, Beijing Univ., Beijing, People's Republic of China.

*International Conference on Reliable Fuels for Liquid-Metal Reactors*, Sept. 7-11, 1986, Tucson, Arizona, sponsored by ANS, AIME, and the U.S. Dept. of Energy. Contact: E. A. Aitken, Tech. Prog. Chairman, General Electric Co., Nuclear System Technology Div., 310 DeGuigne Dr., Sunnyvale, CA 94088 (phone 408-738-7237).

1984, . . Kennedy, P.; Flipot, A.J.; Conrad, R.; Kwast, H., . . June 1985, . . Netherlands Energy Research Foundation, Petten

**EIR-443**, . . *Optimized Broad Energy Group Structures for Radiation Transport in Air and in LWR-Shields*, . . Herrnberger, V.; Padiyath, S., . . October 1981, . . Eidgenoessisches Inst. fuer Reaktorforschung, Wuerenlingen, Switzerland

**EIR-466 (In German)**, . . *Integral Methods for Handling the Slit Problem in the Reactor Shield*, . . Dupont, M., . . August 1982, . . Eidgenoessisches Inst. fuer Reaktorforschung, Wuerenlingen, Switzerland

**EPRI-3489**, . . *Validation of Resonance-Shielding Procedures for Reactor Cell Analysis*, . . Rothenstein, W., . . May 1984, . . EPRI-Research Reports Center, Box 50490, Palo Alto, CA 94303

**EUR-9389**, . . *Calculation of Radioactive Decay Chains Produced by Neutron Irradiation*, . . Ponti, C., . . 1984, . . NTIS (U.S. Sales Only), PC A02/MF A01

**HEDL-7555; CONF-8503149-Summ.**, . . *US-Japan Seminar on Irradiation Testing and Development of Alloys for Fusion*, . . Gelles, D.S.; Doran, D.G. (Comps.), . . August 1985, . . NTIS, PC A24/MF A01

**HEDL-7555, Paper 30; CONF-8503149-Summ., Paper 30**, . . *Alloy Development of JAERI for Fusion Reactor Structural Materials*, . . Hishinuma, A., . . August 1985, . . NTIS, PC A24/MF A01

**IDO-12097**, . . *Tables of Beta Ray Dose Distributions and Spectra*, . . Cross, W.G.; Ing, H.; Freedman, N.O.; Mainville, J., . . February 1983, . . NTIS, PC A05/MF A01; MF available from INIS

**INIS-BR-260, pp.401-408 (In Portuguese); CONF-8311246, pp.401-408 (In Portuguese)**, . . *Negative Flux Occurrence in Gamma Radiation Transport Problems*, . . Garcia, R.D.M., . . 1983, . . NTIS (U.S. Sales Only), PC A20/MF A01

**INIS-BR-260, pp.409-425 (In Portuguese); CONF-8311246, pp.409-425 (In Portuguese)**, . . *Study and Application of DOT 3.5 Computer Code in Radiation Shielding Problems*, . . Otto, A.C.; Mendonca, A.G.; Maiorino, J.R., . . 1983, . . NTIS (U.S. Sales Only), PC A20/MF A01

**IPP-2/278**, . . *Neutron Flux Measurements at the Wendelstein VII-A Stellarator*, . . Weller, A.; Maassberg, H., . . October 1985, . . Max-Planck-Institut fuer Plasmaphysik, Garching, Germany, F.R.

**JAERI-M-82-199 (In Japanese)**, . . *Vector Processing of the Neutron Transport Codes*, . . Ishiguro, M.; Tsutsui, T., . . December 1982, . . Japan Atomic Energy Research Inst., Tokyo

**JAERI-M-83-019**, . . *Data on Thick Target Bremsstrahlung Produced by Electrons*, . . Tanaka, S.; Tanaka, R.; Nakai, Y.; Ozawa, K.; Tabata, T.; Ito, R., . . February 1983, . . Japan Atomic Energy Research Inst., Tokyo

**JAERI-M-84-126**, . . *MORSE-DD, A Monte Carlo Code Using Multi-Group Double Differential Form*

*Cross Sections*, . . Nakagawa, M.; Mori, T., . . July 1984, . . NTIS (U.S. Sales Only), PC A05/MF A01

**KIYI-83-11, pp.4-8 (In Russian)**, . . *Study on the Shielding Unit Efficiency Against Fast Neutrons, Obtained from the 50 MeV Proton-Be Reaction*, . . Kataevskij, Yu.E.; Bukanov, V.N.; Tkachenko, N.A., . . 1983, . . NTIS (U.S. Sales Only), PC A03/MF A01

**NEANDC-198-U; INDC(NEA)5**, . . *International Nuclear Model Code Comparison Study of the Spherical Optical Model for Charged Particles*, . . Hodgson, P.E.; Sartori, E., . . No Date, . . NEA Data Bank, 91191 Gif-sur-Yvette CEDEX, France

**NEANDC-222 'U'; CONF-851157**, . . *Specialists' Meeting on the Use of the Optical Model for the Calculation of Neutron Cross Sections Below 20 MeV. (Paris, 13th-15th November 1985)*, . . Michaudon, A. (Ch.), . . 1986, . . Head of Publications Service, OECD, 2, rue Andre-Pascal, 75775 PARIS CEDEX 16, France

**NEANDC-222 'U', pp.17-27; CONF-851157, pp.17-27**, . . *Definitions, Limitations and Calculations of the Optical Model Potential for Neutrons Below 20 MeV*, . . Mahaux, C.; Sartor, R., . . 1986, . . Head of Publications Service, OECD, 2, rue Andre-Pascal, 75775 PARIS CEDEX 16, France

**NEANDC-222 'U', pp.29-41; CONF-851157, pp.29-41**, . . *Microscopic Calculations of the Imaginary Part of the Optical Model Potential*, . . Osterfeld, F., . . 1986, . . Head of Publications Service, OECD, 2, rue Andre-Pascal, 75775 PARIS CEDEX 16, France

**NEANDC-222 'U', pp.43-52; CONF-851157, pp.43-52**, . . *Energy Dependence of the Shape of the Optical Model Potential*, . . Finlay, R.W.; Petler, J.S., . . 1986, . . Head of Publications Service, OECD, 2, rue Andre-Pascal, 75775 PARIS CEDEX 16, France

**NEANDC-222 'U', pp.53-61; CONF-851157, pp.53-61**, . . *Limits on Charge Symmetry Breaking in the Nuclear Mean Field*, . . Austin, S.M., . . 1986, . . Head of Publications Service, OECD, 2, rue Andre-Pascal, 75775 PARIS CEDEX 16, France

**OCTAVIAN-A-83-07**, . . *Measurements of Neutron Leakage Spectra from 50.32 cm Radium Iron Sphere*, . . Hashikura, H.; Haikawa, K.; Kanasugi, K.; Oka, Y.; An, S.; Takahashi, A.; Yamamoto, J.; Sumita, K., . . 1983, . . NTIS (U.S. Sales Only), PC A02/MF A01

**ORNL/TM-9591, Vol.1**, . . *Physical and Decay Characteristics of Commercial LWR Spent Fuel*, . . Roddy, J.W.; Claiborne, H.C.; Ashline, R.C.; Johnson, P.J.; Rhyne, B.T., . . October 1985, . . NTIS

**ORNL/TM-9864**, . . *On a Central Limit Theory for Variable Size Simple Random Sampling from a Finite Population*, . . Wright, T., . . February 1986, . . NTIS, PC A03/MF A01

**Ann. Nucl. Energy, 9(11-12), 675-682**, . . *On Confidence Limits and Statistical Convergence of Monte Carlo Point-Flux Estimators with Unbounded Variance*, . . Dubi, A.; Elperin, T.; Rief, H., . . 1982

*International Conference on Radioactive Waste Management*, Sept. 7-12, 1986, Winnipeg, Manitoba, Canada, sponsored by the Canadian Nuclear Society and ANS. Contact: Dr. T. S. Drolet, CFFTP, 2700 Lakeshore Rd. West, Mississauga, Ontario, Canada L5J 1K3 (phone 416-823-6654).

*Conference on the Treatment and Containment of Radioactive Wastes and Disposal in Arid Environments (Radwaste '86)*, Sept. 7-13, 1986, sponsored by Atomic Energy Corp. of South Africa, Electricity Supply Commission of South Africa, and Nuclear Development Corp. of South Africa. Contact: Radwaste Conf. Secretariat, NUCOR, Private Bag X256, Pretoria 0001, South Africa (phone 27-12-21-3311 ext. 677).

*14th SOFT—Symposium on Fusion Technology*, Sept. 8-12, 1986, Avignon, France. Contact: A. Torossian, Dept. de Recherches sur la Fusion Contrôlée, Centre d'Études Nucleaires de Cadarache, B.P. No. 1, F-13108 Ste-Paul-lez Durance, France.

*Advances in Reactor Physics and Safety Meeting*, Sept. 17-19, 1986, Saratoga Springs, N. Y., sponsored by ANS. Contact: Norman C. Francis, Knolls Atomic Power Lab., River Road, Schenectady, NY 12301, or Donald R. Harris, Rensselaer Polytechnic Inst., Troy, NY (phone 518-270-6407).

#### October 1986

*American Physical Society Nuclear Physics Division Meeting*, October 9-11, 1986, Vancouver, Canada. Contact: APS, 335 E. 45th St., New York, NY 10017 (phone 212-682-7341).

#### November 1986

*International Symposium on Nuclear Material Safeguards*, Nov. 10-14, 1986, sponsored by IAEA. Contact: IAEA, Conf. Service Section, P.O. Box 100, A-1400 Vienna, Austria.

*United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy*, Nov. 10-28, 1986. Contact: Executive Secretary, UN Conf. for the Promotion of Internatl. Co-operation in the Peaceful Uses of Nuclear Energy, Vienna International Centre, P.O. Box 500, A-1400 Vienna, Austria.

*ANS and Atomic Industrial Forum Joint Meeting*, Nov. 16-21, 1986, Washington, D. C. Contact: D. G. Pettengill, ANS, 555 N. Kensington Ave., La Grange Park, IL 60535 (phone 312-352-6611 ext. 257).

## MARCH 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.

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### RADIATION SHIELDING LITERATURE

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