RSIC Newsletter

OAK RIDGE NATIONAL LABORATORY
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OPERATED BY MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE U.S. DEPARTMENT OF ENERGY

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The victory of success is half won when one gains the habit of work.—Sarah A. Bolton

MID-YEAR ACTIVITY SUMMARY

October 1, 1983—March 30, 1984

The following is a report of Engineering Physics Information Centers' (EPIC) contributor/user activities for the first half of fiscal year (FY) 1984 as computed by the Automated Data Entry System (ADES) on the Data General ECLIPSE computer. Included in the summary are user statistics, information inflow, and technology contributed and processed.

User Statistics

Information dissemination activities reported for the first half of fiscal year 1984 are as follows.

During the reporting period RSIC staff members processed 1789 separate letters/telephone calls (~14.4/working day) requesting a variety of products and services (4753 total). A summary of activities per working day follows.

03.8 code/data packages shipped to requesters

4.3 shielding documents (RSIC reports, handbooks, code/data documentation in addition to those included in above packages) mailed

30.1 responses to inquiries for information; citing possible solutions to problems; recommendations of calculational methods, computer codes, nuclear data sets, or literature for study; troubleshooting for requesters having difficulties using RSIC materials; and miscellaneous consultation and advising services

.1 special retrospective searches

38.3 separate activities were required daily to satisfy the 1789 letters of request received in a six-month period.

In addition to the above activities, the following special products or services were given.

The monthly *RSIC Newsletter* was mailed to a peak of 1771 people. Maintenance of the RSIC directory resulted in 620 changes during the period.

Thirty-four people (12 foreign, 22 domestic) came for an orientation visit and/or to use the Center's facilities during the reporting period.

Information Inflow

Information collection, analysis, and processing activities continued routinely. Staff members reviewed 645 reports and other documents, bringing the shielding database to 13349 bibliographic citations with abstracts and more than 6020 computer code descriptions. The RSIC databases on the DOE/RECON system were subsequently updated. New books of special interest to radiation shielding were reviewed and added to the reference library.

Technology Contributed

RSIC participants contributed their publications and 87 separate transmissions of technology during the period as follows.

35 new computer programs and data libraries—16 from US participants and 19 foreign [5 each from France

and the Federal Republic of Germany (FRG), 4 from Japan, and 1 each from Brazil, Bulgaria, England, Spain, and Taiwan]

6 new hardware versions to extend existing code or data packages—4 domestic and 2 foreign (1 each from France and Switzerland)

29 updates for error corrections discovered in using existing code/data packages—28 domestic and 1 from Japan

17 updates to existing code/data packages (to replace older routines or modules with improved versions or complete, new frozen versions and/or to extend capabilities with additional programming)—13 domestic and 4 foreign (2 from France and 1 each from FRG and South Africa)

Technology Processed

The RSIC staff worked steadily to evaluate and process the technology you contributed. These efforts resulted in the availability of 46 transportable, tested packages of computer programs and data libraries. Included is some technology contributed in the previous year. The details are as follows.

16 new code packages—10 domestic and 6 foreign (2 from Finland, and 1 each from Japan, FRG, France, and the USSR)

5 new data packages—4 domestic and 1 from England

3 updates to include conversions of RSIC code packages to run on other hardware—2 domestic and 1 from South Africa

9 newly frozen versions including improvements made to the original package—4 domestic and 5 foreign (2 from France, and 1 each from England, Japan, and Italy)

02 updates to data packages

11 updates to code packages —9 domestic and 2 foreign (1 each from Finland, and Japan)

It should be noted that the same evaluation, testing, and packaging procedures must be followed for updates to existing code/data packages as those followed for new technology.

We continue to give first priority to responding to user requests and will process new information into transportable, tested packages as feasible. We appreciate the continuing cooperation and collaboration of our contributors/users in seeking to keep pace with advances in the state of the art and with the international shielding community's efforts to ensure "competence" in shielding design and radiation protection.

CHANGES TO THE COMPUTER CODES COLLECTION

During the month five changes were made to the RSIC computer codes collection. Two new code systems were packaged, an existing code package was extended with a new hardware version, an existing code package was updated with a newly frozen source code and extended with the addition of a new database, and a newly frozen version replaced existing technology. Two changes resulted from foreign contributions, one each from FRG and Finland.

CCC-288/SCALE-0

A CDC version of SCALE-0, the modular code system for performing standardized computer analyses for licensing evaluation, is a contribution of Westinghouse Idaho Nuclear Company, Inc., Idaho Falls, Idaho. It is a conversion of the original IBM version for criticality studies developed by the Computer Sciences Division at Oak Ridge National Laboratory (ORNL). Criticality safety analyses can be performed on one-dimensional and multi-dimensional problems. Control modules read and process standard cross-section sets followed by a criticality calculation via a one-dimensional discrete ordinates code (XSDRNPM) or a Monte Carlo code (KENO-IV). SCALE-2 (CCC-450), currently available only for IBM computers, is the most advanced version of the SCALE series, which includes the criticality option, as well as options to perform heat transfer, shielding, and other calculations. SCALE-0 is currently maintained for those requesters interested only in criticality studies who access only CDC computers. We currently recommend CCC-450/SCALE-2. FORTRAN V; CDC CYBER 176.

CCC-420/DARTAB

This code package was updated to incorporate minor format changes in the source code and to add a database which contains estimates of organ

dose rates and incremental cancer mortalities from exposure to various radionuclides. The changes were contributed by ORNL.

Exposure pathways considered include inhalation, ingestion, immersion in contaminated air, and irradiation from a contaminated ground surface. For each radionuclide and exposure pathway, three principal types of data are present: dose rates to reference organs from unit exposure; incremental mortalilty and years-of-life lost from radiation-induced cancer in 18 tissues in a reference cohort of 100,000 persons subjected to chronic exposure; and 30-year committed dose to genetically significant tissues (ovaries and testes) for use in computing estimates of genetic risk. Reference: ORNL-5692 and "Radiation Dose and Health Risk Data Base," informal notes. FORTRAN IV; IBM 370/3033.

CCC-457/KORIGEN

This modification of CCC-217/ORIGEN, an isotope generation and depletion code system, is a contribution of Karlsruhe Nuclear Research Center, Federal Republic of Germany. KORIGEN contains the following modifications to ORIGEN: (1) it uses reactor-physical effective cross sections for important nuclides; (2) spectral indexes can be changed during irradiation; (3) it considers nuclide-specific fission energy release and the resulting (n,gamma)-reactions; (4) it provides an improved calculation of the neutron emission of irradiated fuel considering both the spontaneous fission of the transactinide nuclei and (alpha,n)-reactions; (5) gamma-ray power is calculated directly from the gamma spectra and the infinite neutron multiplication factor is calculated during irradiation; (6) decay data, Q-values, fission yields, etc;, are updated for nearly 1400 nuclides; (7) output options are improved allowing for more flexibility; (8) annual maximum permissible radiotoxicity values valid for FRG are included; and (9) input is reproduced for validation purposes. Reference: KFK 3014 (ORNL-tr-5043). FORTRAN IV; IBM 3033/370-168.

PSR-107/THERMOS-OTA

This newly frozen version of a multigroup integral transport code system for probability method for slabs and cylinders is a contribution of the Technical Research Centre of Finland through the OECD NEA Data Bank, Gif-sur-Yvette, France. THERMOS-OTA uses the collision probability method to solve the integral transport equation for the thermal neutron density in slab or cylindrical geometry. Condensed cross section sets can be obtained for various nuclides and mixtures and can be stored in mass storage as pseudo-material libraries. FORTRAN 77; UNIVAC 1108 (A), CYBER 173 (B), CYBER 740 (C).

PSR-206/TRANSX-CTR

This computer code system, a contribution of Los Alamos National Laboratory, reads nuclear data from a library in MATXS format and produces tables compatible with many discrete-ordinates and diffusion code systems. (Sn) and tables can be produced for neutron and photon or coupled transport. Options include adjoint tables, mixtures, self-shielding, group collapse, homogenization, thermal upscatter, prompt or steady-state fission, transport corrections, elastic removal corrections, and flexible response-function edits. The ability to prepare and edit for heating, damage, gas production, and delayed activity makes TRANSX-CTR especially useful for fusion reactor studies. Reference LA-9863-MS. FORTRAN IV; CDC (A), CRAY (B), IBM (C), and VAX (D).

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.

NCRP Names New Members The National Council on Radiation Protection and Measurements (NCRP) reports the election of six new Council members and the reelection of eight members to serve six-year terms. The newly elected members are:

Peter R. Almond, Ph.D., Physicist and Professor of Radiotherapy Physics, Univ. of Texas, M.D., Anderson Hospital and Tumor Inst., Houston, Texas;

George R. Leopold, M.D., Professor and Vice Chairman, Dept. of Radiology, Chief, Div. of Diagnostic Ultrasound, Univ. of California at San Diego;

Thomas F. Meaney, M.D., Chairman, Div. of Radiology, Cleveland Clinic Foundation, Ohio;

Mary Ellen O'Conner, Ph.D., Assoc. Professor, Dept. of Psychology, Univ. of Tulsa, Oklahoma;

William J. Schull, Ph.D., Professor of Human Genetics, Univ. of Texas Graduate School, Houston; and

John E. Till, Ph.D., President, Radiological Assessment Corp., Neeses, South Carolina.

Those Council members reelected are:

S. James Adelstein, M.D., Ph.D., Professor of Radiology, Dean for Academic Programs, Harvard Medical School, Boston, Massachusetts;

George W. Casarett, Ph.D., Professor of Radiation Biology and Biophysics, and of Radiology, Univ. of Rochester Medical Center, New York;

John M. Heslep, Ph.D., Chief, Laboratory Services Branch, California Dept. of Health Services, Berkeley;

Thomas A. Lincoln, M.D., Corporate Medical Director, Health, Safety and Environmental Affairs, Union Carbide Corp., Danbury, Connecticut;

Charles W. Mays, Ph.D., Research Professor of Pharmacology, Univ. of Utah, Salt Lake City;

James E. McLaughlin, B.S., Radiation Safety Officer, Center for Health Sciences, Univ. of California at Los Angeles;

Charles B. Meinhold, B.S., Senior Health Physicist and Head Safety and Environmental Protection Div., Brookhaven National Laboratory, Associated Universities, Inc., Upton, New York; and

Robert D. Moseley, Jr., M.D., Chairman, Dept. of Radiology, Univ. of New Mexico School of Medicine, Albuquerque.

Schütt Heads NUKEM Division RSIC has recently been informed that NUKEM GmbH in Hanau, FRG, has installed a new central processing division. **D. I. Udo Schütt** is the head of the new division and we look forward to a cooperative and rewarding working relationship with the new division.

George Pelonogoff has replaced Mal Jester as the codes coordinator for Bechtel Corporation, San Francisco.

Address Changes

RSIC has been informed of the following changes of address: *Adnan Taymaz,* formerly with Concordia Univ., Montreal, Canada, is now associated with the Defence Research Establishment in Ottawa; and *Gary Krieger,* has left EDS Nuclear, Inc., Melville, New York, to join KLM Engineering, Inc., Setauket, New York.

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *David Ek, Lennard W. Lee, Jr., James H. Lee, Jr.,* and *Susan S. Voss,* Air Force Weapons Laboratory, Kirtland Air Force Base, New Mexico; *Nolan E. Hertel,* Univ. of Texas; *C. F. Barnett,* Lawrence Livermore National Laboratory, California; *John G. Campbell* and *Robert T. Devine,* Defense Nuclear Agency, Washington; and *Stephen A. Bravdich* and *Steve L. Huber,* Martin Marietta Data Systems, Orlando, Florida.

Shielding Publications Available

The following publications may be of interest to the radiation shielder wishing to enlarge his reference library.

UNIPUB announces the availability of *Nuclear Power Experience,* the proceedings of an International Conference held in Vienna, September 13–17, 1982. The six-volume series examines nearly three decades of industrial use of nuclear power and includes the following volumes:

Vol. 1: *Planning and Development of Nuclear Power Programmes,* IAEA, 1983, 459 pp., ISBN 92-0-050083-8, order #ISP627 1, $72.00.

Vol. 2: *Nuclear Power Production,* IAEA, 1983, 637 pp., ISBN 92-0-050183-4, order #ISP627 2, $99.25.

Vol. 3: *Nuclear Fuel Cycle,* IAEA, 1983, 893 pp., ISBN 92-0-050283-0, order #ISP627 3, $139.25.

Vol. 4: *Nuclear Safety,* IAEA, 1983, 837 pp., ISBN 92-0-050383-7, $130.50.

Vol. 5: *Advanced Systems and International Co-operation,* IAEA, 1983, 659 pp., ISBN 92-0-050483-3, order #ISP627 5, $103.25.

Vol. 6: *Indexes and Lists,* IAEA 1983, 121 pp., ISBN 92-0-050583-X, order #ISP627 6, $24.00.

The following publications are also available from UNIPUB.

The Dose Limitation System in the Nuclear Fuel Cycle and in Radiation Protection, proceedings of a symposium in Madrid, October 19–23, 1981. IAEA 1982, 674 pp., ISBN 92-0-020182-2, order #ISP599, $84.75.

Basic Safety Standards for Radiation Protection, IAEA 1982, 172 pp., ISBN 92-0-123982-3, order #ISP607, $25.75.

Evaluation of Radiation Emergencies and Accidents: Selected Criteria and Data, IAEA 1974, 136 pp., order #IDC152, $13.00.

Genetic Models and Parameters for Assessing the Environmental Transfer of Radionuclides from Routine Releases: Exposures of Critical Groups, IAEA 1982, 96 pp., ISBN 92-0-123582-8, order #ISP611, $16.00.

Ionizing Radiation: Sources and Biological Effects, United Nations Scientific Committee on the Effects of Atomic Radiation 1982 Report to the General Assembly, 772 pp., order #UN82/9/8, $63.00.

Radiation Protection During Operation of Nuclear Power Plants: A Safety Guide, IAEA 1983, 54 pp., ISBN 92-0-123783-9, order #ISP654, $12.00.

Radiation Protection of Workers in the Mining and Milling of Radioactive Ores, IAEA 1983, 72 pp., ISBN 92-0-123683-2, order #ISP637, $15.00.

RSIC GRAB BAG The following reports are available in RSIC on a first-come, first-served basis. Please order by report number.

ORNL/CSD/TM-144, *Analysis and Solution of the Ill-Posed Inverse Heat Conduction Problem*, Charles F. Weber (January 1981).

ORNL/CSD/TM-212, *A Nuclear Data Adjustment Methodology Utilizing Resonance Parameter Sensitivities and Uncertainties*, Bryan L. Broadhead (January 1984).

ORNL/TM-5563, (ENDF-236), *Application of FORSS Sensitivity and Uncertainty Methodology to Fast Reactor Benchmark Analysis*, C. R. Weisbin et al. (December 1976).

ORNL/TM-6634, *Development of a Mid-Head Radiation Dose Response Function*, D. K. Trubey, J. R. Knight, D. E. Bartine, and J. V. Pace, III (February 1979).

ORNL/TM-8111, *Monte Carlo Calculations of Control-Rod Worth of a Medium-Size Pebble-Bed Reactor*, J. S. Tang and B. A. Worley (September 1982).

ORNL/TM-8225, *Neutron Research and Facility Development at the Oak Ridge Electron Linear Accelerator 1970–1995*, R. W. Peelle et al. (July 1982).

ORNL/TM-8987, *Initial Electron Energy Spectra in Water Irradiated by Photons With Energies to 1 GeV*, A. S. Todo et al. (February 1984).

UPCOMING CONFERENCES, COURSES, & SYMPOSIA

Given below is information for conferences, courses, and symposia which may be of interest to the radiation shielding community.

ICFRM-1 Changes Date

The First International Conference on Fusion Reactor Materials (see November 1983 *RSIC Newsletter*) has announced a change in the date for the conference. It will be held December 3–6, 1984, at the Tokyo Prince Hotel.

Details about the conference and abstract and paper submission may be obtained from R. R. Hasiguti, The Science Univ. of Tokyo, Faculty of Engineering, Kagurazaka, Shinjuku-ku, Tokyo 162, Japan.

2nd Space Symposium Announced

The Chemical/Nuclear Engineering Department of the University of New Mexico has announced the 2nd Symposium on Space Nuclear Power Systems, to be held January 14–16, 1985, in Albuquerque, New Mexico. The sessions, listed below with the session chairmen, will provide a national forum for discussion, information sharing, and technology transfer among the planners and users of space-based power systems.

Missions and Systems—David Buden, LANL/NASA HQ, RSE-5, 600 Independence Ave., SW, Washington, DC 20576

Materials and Fuel—Eugene Wewerka, LANL, MS G750, P.O. Box 1663, Los Alamos, NM 87545

Energy Conversion–I—Harvey Bloomfield, NASA/LRC, 21000 Brookpark Rd., Cleveland, OH 44135

Reactors and Shield—T. J. Trapp, SRT/LANL, P.O. Box 1663, Los Alamos, NM 87545

Energy Conversion–II—Gerry Stapfer, JPL, MS 277-102, 4800 Oak Grove Dr., Pasadena, CA 91109

Technical Exchange—Norman Roderick, Chem/Nuclear Eng. Dept., FEC 209C, Univ. of New Mexico, Albuquerque, NM 87131

Power Conditioning and Electronics—William Borger, AFWAL/POOS, Aeropropulsion Laboratory, Bldg. 18, Wright Patterson Air Force Base, OH 45433

Thermal Management—Abraham Hertzberg, AERP/FL-10, Univ. of Washington, Seattle, WA 98195

System Analysis and Testing—James French, JPL 169-515, 4800 Oak Grove Drive, Pasadena, CA 91109

Safety and Reliability—Patrick J. McDaniel, Sandia National Laboratory, Div. 9336, P.O. Box 5800, Albuquerque, NM 87185

Instrumentation Sensors and Control—James Gover, Sandia National Laboratory, Div. 2155, P.O. Box 5800, Albuquerque, NM 87185

Papers for the sessions are solicited. Selection will be made based on a 300–500-word abstract which should be received by **July 1, 1984.** Those wishing to submit a paper should mail the original and two copies to the Chairman of the Technical Session for which the paper is to be considered. A copy should also be sent to Mohamed S. El-Genk, Technical Program Chairman, Space Nuclear Power Symposium, Chemical/Nuclear Engr. Dept., FEC 239 UNM Campus, Albuquerque, NM 87131

Calendar

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

July 1984

9th Annual Conference of the Australian Radiation Protection Society, July 9–12, 1984, Darwin, North Territory, Australia. Contact: I. A. Prince, Conference Convenor, 1984 ARPS Conference, C/ - GPO Box 1701, Darwin, NT 5794, Australia.

Topical Meeting on Fission Product Behaviour and Source Term Research, July 15–19, 1984, Snowbird, Utah, sponsored by ANS; Electric Power Research Institute (EPRI); Canadian Nuclear Society; and the Atomic Energy Society of Japan. Contact: W. J. Quapp, EG & G Idaho, Inc., P.O. Box 1625, Idaho Falls, Idaho 83415, USA (phone 208-526-9606).

IEEE Annual Conference on Nuclear and Space Radiation Effects, July 22–25, 1984, Colorado Springs, Colorado. Contact: B. D. Shafer, Div. 2115, Sandia National Laboratories, Albuquerque, NM 87185 (phone 505-846-0629).

August 1984

Practical Applications of Ground Water Models, August 15–17, 1984, Columbus, Ohio. Contact: David M. Nielsen, Conference Coordinator, National Water Well Association, 500 W. Wilson Bridge Rd., Worthington, OH 43085 (phone 614-846-9355).

Medical Planning and Care in Radiation Accidents, August 20–24, 1984, Oak Ridge, Tennessee, a course sponsored by the

U.S. Department of Energy (DOE). Contact: Robert C. Ricks, REAC/TS, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831 (phone 615-576-3131).

Occupational and Environmental Radiation Protection, August 20–24, 1984, Boston, Massachusetts, a course offered by Harvard School of Public Health. Contact: Office of Continuing Education, Harvard School of Public Health, 677 Huntington Ave., Boston, MA 02115 (phone 617-732-1171).

International Topical Meeting on Fuel Reprocessing and Waste Management, August 26–29, 1984, Jackson Hole, Wyoming, sponsored by ANS. Contact: L. W. McClure, Technical Program Chairman, P.O. Box 3807, Idaho Falls, ID 83401.

September 1984

Topical Conference on Neutron-Nucleus Collisions: A Probe of Nuclear Structure, September 5–8, 1984, Glouster, OH 45732 (phone 614-594-6928).

5th International Symposium on Capture Gamma Ray Spectroscopy and Related Topics, September 10–14, 1984, Oak Ridge, Tennessee. Contact: S. Raman, Physics Division, ORNL, P.O. Box X, Oak Ridge, Tennessee 37831-2008 USA.

International Meeting on Thermal Nuclear Reactor Safety, September 10–14, 1984, Karlsruhe, Fed. Rep. Germany, sponsored by the European Nuclear Society, ANS, and German Nuclear Technology Society. Contact: H. Rininsland, Kernforschungszentrum Karlsruhe GmbH, Postfach 3640, D-7500 Karlsruhe, F. R. Germany.

Handling of Radiation Accidents by Emergency Personnel, September 11–14, 1984, a course sponsored by the DOE. Contact: Robert C. Ricks, REAC/TS, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831 (phone 615-576-3131).

10th International Conference of Plasma Physics and Controlled Nuclear Fusion Research, September 12–19, 1984, London, United Kingdom, sponsored by the IAEA. Contact: IAEA, P.O. Box 100, Vienna International Centre, A-1400 Vienna, Austria.

ANS Topical Meeting on Physics and Shielding, September 17–19, 1984, Chicago, Illinois. Contact: Leo LeSage, Argonne National Laboratory, Applied Physics Div., 9700 South Cass Ave., Argonne, Illinois 60439 USA (phone 312-972-6045).

Health Physics in Radiation Accidents, September 17–21, 1984, a course sponsored by the DOE. Contact: Robert C. Ricks, REAC/TS, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831 (phone 615-576-3131).

5th ASTM-EURATOM Symposium on Reactor Dosimetry, September 24–28, 1984, Geesthacht, Fed. Rep. of Germany, sponsored by Commission of the European Communities, ASTM, U.S.-DOE, and U.S.-NRC. Contact: E. B. Norris, Southwest Research Institute, P.O. Drawer 28510, San Antonio, Texas 78284 (for Japanese and US authors); H. Röttger, Joint Research Centre, Petten Establishment, HFR Div., Postbus 2, 1755 ZG Petten (N. H.), Netherlands (all other authors).

13th Symposium on Fusion Technology, September 24–28, 1984, Varese, Italy. Contact: 13th SOFT, Joint Research Centre, Ispra Establishment, I-21020 Ispra, Varese, Italy (phone 0332-789988/780131).

October 1984

Conference on Radiation Protection: Standards and Regulatory Issues, October 7–10, 1984, Orlando, Florida, sponsored by Atomic Industrial Forum. Contact: Conference Office, Atomic Industrial Forum, Inc., 7101 Wisconsin Ave., Bethesda, Maryland 20814 (phone 301-654-9260).

International Symposium on High-Dose Dosimetry, October 8–12, 1984, Vienna, Austria, sponsored by the IAEA. Contact: Conference Service Section, IAEA, P.O. Box 100, A-1400, Vienna, Austria.

International Conference on Nuclear and Radiochemistry, October 8–12, 1984, Lindau, Bodensee, F. R. Germany. Contact: Gesellschaft Deutscher Chemiker, Abt. Tagungsorganisation, Postfach 900440, D-6000 Frankfurt-am-Main 90, F. R. Germany.

International Conference on Occupational Radiation Safety in Mining, October 15–18, 1984, Toronto, Ontario, Canada, sponsored by the Canadian Nuclear Assoc., Canadian Dept. of Energy, Mines, and Resources, and the Atomic Energy Control Board. Contact: Internatl. Conf. on Occupational Radiation Safety in Mining, Canadian Nuclear Assoc., 111 Elizabeth St., 11th Floor, Toronto, Ontario, Canada M5G 1P7.

Symposium on Radiation Dosimetry, October 15–18, 1984, Knoxville, Tennessee, sponsored by ORNL. Contact: R. T. Greene, ORNL, P.O. Box X, Bldg. 7710, Oak Ridge, TN 37831-2008 USA.

Meeting of the Nuclear Physics Div. of the American Physical Society, October 18–20, 1984, Nashville, Tenn. Contact: American Physical Society, 335 E. 45th St., New York, NY 10017 USA.

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 Strahlenphpysik, German Democratic Republic.

International Symposium on the Implementation of the IAEA Codes of Practice and Safety Guides for Nuclear Power Plants, October 29–November 2, 1984. Contact: Conf. Svc. Sect., IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Nuclear Power Systems Symposium, October 31–November 2, 1984, Orlando, Florida, sponsored by the Institute of Electrical and Electronics Engineers. Contact: D. Louis Costrell, National Bureau of Standards, C333 Radiation Physics, Washington, DC 20234 (phone 301-921-2518).

Nuclear Science Symposium, October 31–November 2, 1984, Orlando, Florida. Contact: L. C. Oakes, Oak Ridge National Lab., P.O. Box X, Oak Ridge, TN 37831 (phone 615-574-5527).

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.

Inter-Regional Seminar on Practical Problems Encountered in the Safe Transport of Radioactive Materials, November 5–8, 1984, Vienna. Contact: Conf. Svc. Sect., IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Joint Meeting of the American Nuclear Society, the Atomic Industrial Forum, and the European Nuclear Society, November 11–16, 1984, Washington. Contact: George W. Cunningham, Nuclear Studies, Mitre Corp., 1820 Dolley Madison Blvd., McLean, Virginia 22102 USA.

8th Conference on the Applications of Accelerators in Research and Industry, November 12–14, 1984, Denton, Texas, sponsored by North Texas State University. Contact: Accelerator Conference, Physics Dept., North Texas State Univ., Box 5368, Denton, TX 76203-5368.

International Conference on Power Plant Simulation, November 19–21, 1984, Cuernavaca, Mexico, sponsored by the Instituto de Investigaciones Eléctricas, Mexico, with the consponsorship of the Nuclear Regulatory Commission (NRC). Contact: for USA and Canada; David Hetrick, Dept. of Nuclear and Energy Engineering, Univ. of Arizona, Tucson, AZ 85721; and for other countries, Dra. elia Méndez, Instituto de Investigaciones Eléctricas, Depto. de Simulacion, Leibnitz 14, 3er, piso, Co. Anzures, 11590, Mexico, D. F.

International Conference on Fusion Reactor Materials, November 19–22, 1984, Tokyo, Japan, sponsored by the Atomic Energy Society of Japan, Iron and Steel Institute of Japan, Japan Institute of Metals, and Japan Society of Applied Physics. Contact: R. R. Hasiguti, Science Univ. of Tokyo, Faculty of Engineering, Kagurazaka, Shinjuku-ku, Tokyo 162 Japan.

International Symposium on Assessment of Radioactive Contamination in Man, November 19–23, 1984, Paris, sponsored by the International Atomic Energy Agency. Contact: Conf. Svc. Sect., IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Conference on Radioactive Waste Management, November 27–29, 1984, London, sponsored by the British Nuclear Energy Society. Contact: The Secretariat, British Nuclear Energy Society, at the Institution of Civil Engineers, 1-7 Great George St., London SWIP 3AA, UK.

MAY 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

ANL/FPP/TM-172, . . *An Assessment of Tritium Breeding Requirements for Fusion Power Reactors.*, . . Jung, J., . . December 1983, . . NTIS, PC A03/MF A01

ANSI/ANS-58.3-1977, . . *American National Standard: Physical Protection for Systems and Components Important to Safety.*, . . American Nuclear Society, La Grange Park, IL, . . 1977, . . American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60525 $18.00

ANSI/ANS-8.10-1983-Rev., . . *American National Standard: Criteria for Nuclear Criticality Safety Controls in Operations with Shielding and Confinement. Revision.*, . . American Nuclear Society, La Grange Park, IL, . . 1983, . . American Nuclear Society, 555 Kensington Ave., La Grange Park, IL 60525 $15.00

ANSI/ANS-19.1-1983, . . *American National Standard: Nuclear Data Sets for Reactor Design Calculations.*, . . American Nuclear Society, La Grange Park, IL, . . July 22, 1983, . . American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60525 $20.00

ANSI/ANS-19.3-1983, . . *American National Standard: For the Determination of Neutron Reaction Rate Distributions and Reactivity of Nuclear Reactors.*, . . American Nuclear Society, La Grange Park, IL, . . 1983, . . American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 50525 $30.00

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