RSIC Newsletter

OAK RIDGE NATIONAL LABORATORY
POST OFFICE BOX X • OAK RIDGE, TENNESSEE 37831
OPERATED BY MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE U.S. DEPARTMENT OF ENERGY

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No. 233 *April 1984*

Leadership is not magnetic personality—that can just as well be a glib tongue. It is not "making friends and influencing people"—that is flattery. Leadership is lifting a person's vision to higher sights, the raising of a person's performance to a higher standard, the building of a personality beyond its normal limitations.—Peter Drucker

RSIC NEWSLETTER MASTHEAD CHANGES

The *RSIC Newsletter* masthead has changed to reflect name changes of the government sponsor from Atomic Energy Commission to Energy Research and Development Administration to Department of Energy (DOE) during the last 20 years. In this issue the masthead is changed for the first time to show a change in DOE's prime contractor for the laboratory facilities.

On April 1, 1984, Martin Marietta Energy Systems, Inc. became operating contractor for the Oak Ridge National Laboratory, the Y-12 Plant, Oak Ridge Gaseous Diffusion Plant, and the Paducah Gaseous Diffusion Plant. Energy Systems, a newly formed subsidiary of the Martin Marietta Corporation, was incorporated for the purpose of operating these four DOE facilities.

Kenneth Jarmolow, Vice President for Research and Development for the Corporation, is the new president of Energy Systems. Management of Oak Ridge National Laboratory is virtually unchanged and RSIC expects no change in its activities and operations under the new contractor.

Nominations for ICRU Gray Medal Invited

The International Commission on Radiation Units and Measurements (ICRU) is seeking nominations for the fifth award of the ICRU Gray Medal, established in 1967. The medal is awarded every four years for outstanding contributions in scientific fields of interest to the ICRU in honor of the late *Louis Harold Gray*, former member and Vice-Chairman of the Commission.

The first four recipients of the medal are as follows:

Lewis V. Spencer in 1969 for his work on the theory of charged particle penetration.

John W. Boag in 1973 for a number of outstanding scientific contributions, including work on the theory of recombination taking place in ionization chambers.

Mortimer M. Elkind in 1977 based on his work leading to the identification of repair in cells.

Maurice Tubiana in 1981 for his work on the use of radioactive isotopes and high energy radiation in medicine.

The fifth award is expected to be made at the XVIth International Congress of Radiology in 1985.

Nominations for the medal from any person or organization must include a complete biographical sketch *(curriculum vitae)* of the nominee, reprints or any other scientific data which show the significant contributions

made by the nominee, and the proponent's evaluation of the importance of the contributions. Nominations should be directed to the Chairman of the International Commission on Radiation Units and Measurements, Suite 1016, 7910 Woodmont Ave., Bethesda, MD 20814, and must be received by the ICRU no later than **July 1, 1984.**

NOTES ON SAMPO80

RSIC recently announced the availability of PSR-204/SAMPO80, developed for gamma spectrum analysis for Ge(Li) and HPGe detectors with nuclide identification, a contribution of the Nuclear Engineering Laboratory of Helsinki University of Technology, Finland. We failed to call attention to an identical transmission from the OECD Nuclear Energy Agency Data Bank where SAMPO80 is packaged and available under NEA Abstract 0691/02. European requesters will find it more convenient to contact the NEA DB for the code package. It is also available from the Computer Physics Communications Program Library, Queen's University of Belfast, N. Ireland.

It should be noted that SAMPO80 is the latest in a code series which began, circa 1969, at the University of California's Lawrence Berkeley Laboratory in support of the doctoral thesis of *Jorma Routti,* now a professor at Helsinki University of Technology. An early CDC 6600 version, PSR-186/SAMPO, was placed in RSIC by the University of London Reactor Centre (June 1982). SAMPO80 represents extensions and improvements to the technology made operable on minicomputers by the Helsinki University developers.

Thus, we are pleased to call attention to the several individuals and institutions whose cooperation and collaboration make it possible for RSIC to better serve the international shielding community.

CHANGES TO THE COMPUTER CODES COLLECTION

During the month six new code packages were added to the RSIC Computer Codes Collection, three existing code packages were enhanced with additional or modified software, one was extended with an additional hardware version, and one was replaced with a newly frozen version. Four of the changes resulted from foreign contributions—two from Japan and one each from Italy and the USSR.

CCC-203/MORSE

This general purpose Monte Carlo multigroup neutron and gamma-ray transport code system has been updated to correct an error in the UNIVAC (A) and CDC (B) versions and to add a new hardware version. The error in Subroutine ENDRUN was reported by the contributors at Oak Ridge National Laboratory and affects gamma-ray only adjoint cases; neutron only and coupled neutron-gamma-ray adjoint calculations will run correctly. The error causes a DO-loop index to be set incorrectly and reported answers are actually meaningless numbers. Details of the correction are available upon request.

The code package was also extended to include a Digital Equipment Corporation VAX version. This new version was contributed by the University of Wisconsin at Stoughton and has been designated (D) version. FORTRAN IV; UNIVAC 1108 (A), CDC 6600 (B), IBM 360/370 (C).

CCC-379/SHIELDOSE

The documentation for this code system for space shielding radiation dose calculations has been updated with an addendum supplied by the code contributor, National Bureau of Standards, Washington. Persons interested in having copies of the addendum may request them from RSIC.

CCC-410/THIDA

This dose calculation code system for a nuclear fusion facility was updated to include the activation data checking and plotting code AMOEBA. The new addition was contributed by the original code contributors, Japan Atomic Energy Research Institute, Tokai-Mura, Japan. AMOEBA checks and plots the data required for the induced activation calculations used in THIDA. Reference: JAERI 1280. FORTRAN IV; FACOM M-200.

CCC-422/RADRISK

This code system for estimating radiation doses

and health effects from inhalation or ingestion of radionuclides was contributed by Oak Ridge National Laboratory. RADRISK is a methodology designed to yield estimates of health effects to a hypothetical cohort of 100,000 persons assuming constant, lifetime exposure to a given radionuclide. Inhalation, ingestion, and external exposure are the pathways considered. The amount of radioactive material present in various organs as a function of time is computed by solving a set of differential equations. This activity is multiplied by dosimetric S factors to compute the dose rate. The dose rates over a lifetime of the cohort are then processed through a life-table actuarial analysis to estimate incremental cancer deaths in the cohort, taking into consideration all competing risks. Reference: ORNL/TM-7105. FORTRAN IV; IBM-3033.

CCC-452/HADOC

This code system for calculation of external and inhalation doses from acute radionuclide releases was contributed by Battelle Pacific Northwest Laboratory, Richland, Washington. The code system calculates external dose from air submersion and inhalation doses following acute radionuclide releases. Atmospheric dispersion is calculated using the Hanford model with options to determine maximum conditions. Building wake effects and terrain variation may also be considered. Doses are calculated using dose conversion factors supplied in a data library. Reference: PNL-3503. FORTRAN IV; UNIVAC 1100-70.

CCC-454/DISPERS

This collection of mathematical models for dispersion of radionuclides which enter surface water and groundwater through routine or accidental releases was contributed by the U.S. Nuclear Regulatory Commission (NRC), Washington. The package contains models for rivers, the Great Lakes (near-shore zone), and groundwater. All models are straightforward simulations of dispersion with constant coefficients and, in general, simple geometries. The package also contains calculations of dispersion of a continuous source into a river after steady-state has been attained, and for dispersion in a river with steady or unsteady source. Reference: NUREG-0868. FORTRAN IV; CDC-6600.

CCC-455/DEIS

This code system, designed to calculate and assess radiological impacts associated with the management and disposal of low-level radioactive waste, was contributed by NRC. The system consists of five computer codes which are used to determine impact measures for a variety of scenarios. Five quantifiable impact measures have been selected for calculation: dose to members of the public (individual and population), occupational exposures, costs, energy use, and land use. Three phases of waste management are considered: waste processing, transportation, and disposal. Reference: NUREG-0782, Vol. 4 Appendix H. FORTRAN IV; CDC 6600.

PSR-111/APPLE-2

This code system for plotting neutron and gamma-ray spectra and reaction rates obtained from the ANISN, DOT, and MORSE codes was replaced by two hardware versions contributed by Japan Atomic Energy Research Institute, Tokyo (FACOM), and OECD NEA Data Bank, Gif-sur-Yvette, France (IBM). The main objective for the development of APPLE-2 was to simplify the data processing for fusion reactor neutronics calculations. It is a major enhancement and modifidation of its predecessor, APPLE, which could handle only ANISN results. In addition, APPLE-2 can (1) calculate the spatial distribution and region volume integrated values, (2) plot reaction rate distribution along R or Z direction, (3) plot reaction rates or scalar fluxes summed over specified groups, (4) rearrange angular flux calculated by ANISN, and (5) punch a shell source at any specified spatial mesh point in FIDO format. Reference: JAERI-M-82-091. FORTRAN IV; FACOM M-200 (A) and IBM 3081 (B).

PSR-159/RENDER

This package of ENDF/B pre-processing codes for nuclear data in ENDF/B format was updated to replace the following routines with newly frozen versions: LINEAR, RECENT, SIGMA1, GROUPIE, and CONVERT. The new routines were provided by Brookhaven National Laboratory, Upton, New York. FORTRAN IV; IBM 360/370 (A), CDC (B), and CRAY (C).

PSR-184/CRESO

This resonance data-handling code system was contributed by the Comitato Nazionale Energia Nucleare, Bologna, Italy, through the OECD NEA Data Bank, Gif-sur-Yvette, France, which implemented and tested this version on the IBM 3081. CRESO calculates energy-dependent pointwise cross sections from resonance parameters in ENDF/B-IV and ENDF/B-V format. Reference: CNEN-RT-FI(81)30. FORTRAN IV and Assembler; IBM 3081.

PSR-203/SAIPS

This neutron spectra unfolding code system was contributed by Latvian State University, Riga, Latvia, USSR. The system organizes and processes data sets used for unfolding neutron spectra. The package contains data for more than 80 reactions used in unfolding. Reference: ORNL-tr-4941. PL-1, FORTRAN IV, and Assembler language; ES EhVM.

PSR-207/INGEN

This general purpose mesh generator for two- and three-dimensional finite-element codes was contributed by Los Alamos National Laboratory, Los Alamos, New Mexico. The basic parts of the code are surface and three-dimensional region generators that use linear-blending interpolation formulas. These generators are based on an i,j,k index scheme, which is used to number nodal points, construct elements, and develop displacement and traction boundary conditions. INGEN produces results compatible with structural analysis computer codes such as NONSAP and SAP6. Reference: LA-9402-MS. FORTRAN IV; CDC.

CHANGES TO THE DATA LIBRARY COLLECTION

One existing data library was enhanced with additional software.

DLC-90/DOSCOV

This 24-group covariance data library for neutron reaction cross sections in Al, Ti, Mn, Fe, Ni, Co, Cu, In, I, U-235, U-238, Np-237, and Pu-239 was updated to add the COVERX Service Module for format conversion and multigroup covariance data manipulation. The previous version of DOSCOV had no retrieval program. FORTRAN IV; IBM 360/370.

PERSONAL ITEMS

In serving a specialized area of scientific endeavor, it seems important that we take note of the movement of people concerned with radiation protection, transport, and shielding in the nuclear industry. We, therefore, continue to carry personal items as they are brought to our attention. During the past month we have been informed of the following changes.

The Los Angeles Radiological Society has announced that it has moved to 5200 Century Boulevard, Suite 920, Los Angeles, California 90045, effective January 3, 1984.

RSIC has been informed of the following changes in address: *S. L. Bhatia,* from Newport News Reactor Services, Inc., to Rockwell Hanford Operations, Richland, Washington; *Robert D. Wilson,* from Gearhart Industries, to Southern Oregon State College, Ashland; *David G. Ward,* from Gaithersburg, Maryland, to Los Catos, California; *A. K. Ziver,* from Nuclear Associates, to Electrowatt Engineering Services, Ltd., Cheshire, United Kingdom; *Tawik Al-kusayer* from King Abdulaziz University, to King Saud University, Saudi Arabia; and *Jim E. Morel,* from Sandia National Laboratories, to Los Alamos National Laboratory, Los Alamos, New Mexico.

Visitors to RSIC

During the month of March the following persons came for an orientation visit and/or to use RSIC facilities: *Mary White,* DOE, Albuquerque, New Mexico; *R. J. Neuhold,* and *P. B. Hemmig,* DOE, Washington, D. C.; *Albert E. Rainis,* Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland; *Darlene Schmidt,*

editor, ANS News, La Grange, Illinois; and *Thomas E. Albert,* Science Applications, Inc., Clearwater, Florida.

CALENDAR

Your attention is called to the following seminars, conferences, and courses of interest to the radiation shielding and protection community.

May 1984

ANS Executive Conference on Nuclear Waste Update: Implementation of Law, Regulations, and Programs, May 6–9, 1984, Mescalero, New Mexico. Contact: General Chairman Dennis A. Bitz, Bechtel Power, 50 Beale St., San Francisco, CA 94105 (phone 415-768-3486), or Technical Program Chairman Edward J. Hennelly, E. I. DuPont, Savannah River Laboratory, Aiken, SC 29808 (phone 803-725-2828).

Applications of KENO in Nuclear Criticality Safety, May 7–11, 1984, Knoxville, Tennessee, sponsored by Technical Management Services, Inc. Contact: Technical Management Services, Inc., P.O. Box 16, New Hartford, Connecticut 06057 (phone 203-379-2339).

6th Annual Symposium on Safeguards and Nuclear Material Management, May 14–18, 1984, Venice, Italy, sponsored by the European Safeguards Research and Development Association (ESARDA) and the Commission of the European Communities. Contact: L. Stanchi, Commission of the European Communities Joint Research Centre, I-21020 Ispra (Varese), Italy.

International Symposium on In-Beam Nuclear Spectroscopy, May 14–18, 1984, Debrecen, Hungary. Contact: T. Fenyes, Institute of Nuclear Research of the Hungarian Academy of Sciences, Bem ter 18/c, H-4001 Debrecen, Pf. 51, Hungary.

ENERGEX '84, 2nd International Energy Exposition and Conference, May 14–19, 1984, Regina, Canada. Contact: Fred Curtis, ENERGEX '84, Univ. of Regina, Saskatchewan, S4S 0A2, Canada (phone 306-584-4095).

Nuclear Power and the Energy Crisis II, a workshop, May 21–25, 1984, Oak Ridge, Tennessee. Contact: Ron Weinberg or Phyllis Lynch, Energy Education Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117 (phone 615-576-3038).

Personnel Radiation Dosimetry, May 21-25, 1984, Oak Ridge, Tennessee, sponsored by Oak Ridge National Laboratory. Contact: R. E. Swaja or C. S. Sims, ORNL, P.O. Box X, Bldg. 7710, Oak Ridge, Tennessee 37831 (phone 615-574-5851).

Conference on the Decommissioning of Nuclear Power Plants, May 22–24, 1984, Luxemburg. Contact: D. Nicolay, Commission of the European Communities, Jean Monnet Bldg., B4/072, L-2920 Luxemburg.

International Workshop on Historical Dose Experience and Dose Reduction at Nuclear Power Plants, May 29–June 1, 1984, Upton, New York. Contact: John Baum, Department of Energy, Brookhaven National Laboratory, Upton, NY 11973.

June 1984

24th Annual International Conference of the Canadian Nuclear Association, June 3–6, 1984, Saskatoon, Saskatchewan, Canada. Contact: J. A. Weller, General Manager, Canadian Nuclear Association, 111 Elizabeth Street, 11th Floor, Toronto, Ontario, Canada M5G 1P7.

29th Annual Meeting of the Health Physics Society, June 3–7, 1984, New Orleans, Louisiana. Contact: Richard J. Burk, Jr., Executive Secretary, Health Physics Society, 4720 Montgomery Lane, Suite 506, Bethesda, Maryland 20014, USA.

ANS Annual Meeting, June 3–8, 1984, New Orleans, Lousiana. Contact: Thomas H. Row, ORNL, Bldg. 4500, MS-S-178, Oak Ridge, TN 37831-2008 USA.

Annual Meeting of the Society of Nuclear Medicine, June 5–8, 1984, Los Angeles, California. Contact: Society of Nuclear Medicine, 475 Park Ave. South, New York, NY 10016 (phone 212-889-0717).

12th International Symposium on Effects of Radiation on Materials, June 18–20, 1984, Williamsburg, Virginia, sponsored by the American Society for Testing and Materials. Contact: James S. Perrin, Fracture Control Corp., 340-G South Kellog Ave., Goleta, California 93117 (phone 805-964-8877); or John Koziol, Combustion Engineering, Inc., 1000 Prospect Hill Rd., Windsor, Connecticut 06095 (phone 203-688-1911).

Annual Meeting of the European Nuclear Medicine Society, June 18–20, 1984, Helsinki, Finland. Contact: Esko Riihimaki, Room T 1180, Meilahti Hospital, SF-00290 Helsinki, Finland.

Probabilistic Risk Assessment: Applications and Uses for Decision-Making in the Nuclear Industry, a course offered by the Massachusetts Institute of Technology, June 25–27, 1984. Contact: Office of the Summer Session, Room E19-356, Massachusetts Institute of Technology, Cambridge, MA 02139 (phone 617-253-2101).

Conference on High Energy Physics, June 25–29, 1984, Trieste, Italy, sponsored by the International Atomic Energy Agency (IAEA) and the United Nations Educational Scientific and Cultural Organization. Contact: International Centre for Theoretical Physics, P.O. Box 586, I-34100 Trieste, Italy (phone 224281-6).

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).

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 Whole, 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. Contact: J. Rapaport (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, Oak Ridge National Laboratory, 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.

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).

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; H. Rottger, Joint Research Centre, Petten Establishment, HFR Div., Postbus 2, 1755 ZG Petten (N. H.), Netherlands.

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, Ocotber 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 Oak Ridge National Laboratory. 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.

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 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 IAEA. 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.

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.

This Literature is on order. It is not in our system. Please order from NTIS or other available source as indicated.

RADIATION SHIELDING LITERATURE

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