RSIC Newsletter

OAK RIDGE NATIONAL LABORATORY
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FOR THE U.S. DEPARTMENT OF ENERGY

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In all eternity it is impossible for me to compel a person to accept an opinion, a conviction, a belief; but one thing I can do...: I can compel him to take notice. – Soren Kierkegaard

CHANGES TO THE RSIC COMPUTER CODES COLLECTION

During the month three existing code packages were replaced with new versions, two new code systems were packaged, and a new hardware version was extended to include an existing code package.

CCC-316/XOQDOQ-82

The U.S. NRC and Pacific Northwest Laboratories, Richland, Washington, contributed an updated version of this code system for meteorological evaluation of routine effluent releases at nuclear power stations. The new system includes considerable new development over that originally packaged (October 1981), including improved documentation. XOQDOQ computes relative atmospheric dispersion factors, (X/Q's) and deposition factors (D/Q's) for 22 specific distances out to 50 miles from the site. From these, X/Q and D/Q values for ten distance segments are computed. The program is based on a straight-line trajectory Gaussian plume model and computes an effective plume height that accounts for physical release height, aerodynamic downwash, plume rise, and terrain features. Reference: NUREG/CR-2919 (PNL-4380) (September 1982). FORTRAN IV; IBM 3033.

CCC-428/ONEDANT

This one-dimensional, multigroup, diffusion-accelerated, neutral-particle transport code developed by the Los Alamos National Laboratory (LANL) Los Alamos, New Mexico, was extended to include a CDC CYBER 174 version contributed by the Swiss Federal Institute for Reactor Research, Wurenlingen, Switzerland. Reference: TM-22-83-28, FORTRAN IV; CDC 7600 and CYBER 174 (A).

CCC-447/TACT-III

The TACT-III code system, a contribution of the Health and Safety Research Division of Oak Ridge National Laboratory (ORNL) and the U.S. Nuclear Regulatory Commission (NRC), Washington, D. C., is designed to calculate the inventory of radioactivity released from a reactor core as the material migrates through user-defined regions (nodes) of the containment. TACT accounts for washout by filters and sprays as the material leaks to the outside environment and permits direct calculations of radioactivity and dose estimates associated with daughter products. The user's input data specifies a dynamic compartment model which is represented by systems of ordinary differential equations with constant coefficients. The equations are solved explicitly by matrix transformation methods. References: NUREG/CR-3287 (ORNL/TM-8763). FORTRAN IV; IBM 370/3033.

CCC-450/SCALE-2

The SCALE-1 modular code system for performing standardized analysis for licensing evaluation, contributed by the Computer Sciences Division of ORNL, has been replaced by a new version which includes considerable new development. The new version includes two new control modules: Heat Transfer Analysis Sequence (HTAS1) which utilizes the HEATING6 program to provide analysis of a shipping cask under steady state, fire and post-fire condition, and Shielding Analysis Sequence No. 1 (SAS2). The SAS2 control module performs a depletion calculation using the ORIGEN-S module to prepare a radiation source term for the ensuing one-dimensional (radial) transport calculation through the wall of a spent fuel storage cask. Decay data for several nuclides from the light element and actinide libraries were updated with more recent data. The MARS geometry subroutine library has undergone substantial changes to correct tracking errors that occurred in several MORSE-SGC-S problems and to restructure the COMMONS and other data transfers for improved efficiency and internal consistency. Primary modifications to MORSE, SAS3, and JUNEBUG involved internal COMMONS and/or program interface changes to allow interaction with the updated MARS. Some errors were also detected and corrected in JUNEBUG. The ORIGEN-S card image nuclear data libraries are now consistent with their description in Section M6 of the SCALE documentation. Various other revisions and corrections were made to improve the calculational efficiency of the system. The new version includes documentation for SAS2, HTAS1, XSDRNPM-S, XSDOSE, ICE-S, and the ORIGEN-S Data Libraries. Revised documentation is provided for the Standard Composition Library, Section M8. In light of the extensive advances in the technology, RSIC recommends that current users of prior versions transfer to the use of SCALE-2. Reference: NUREG/CR-0200 ORNL/NUREG/CSD-2 Vols. I/R2, II/R1 and III/R1. FORTRAN IV; IBM 3033

PSR-171/NJOY (6-83)

The code system for producing pointwise and multigroup neutron and photon cross sections from ENDF/B data has been replaced with current technology, entitled NJOY (6-83), by the orginators at LANL. Featuring increased compatibility with IBM, VAX, and FORTRAN-77 systems, important new capabilities are included for covariance and Monte-Carlo libraries (improved photon production, MCNP-3 output), output in MATXS format (fission matrix packing), and power-reactor data (delayed neutrons). In addition errors have been repaired, coding has been cleaned up, and a number of group-structure and weight-function options have been added. Reference: LA-9303-M, Vol. I and II, ENDF 324. FORTRAN IV; CDC.

PSR-198/SPIRT

The SPIRT code system for calculating iodine removal constants (lambdas) for post-LOCA containment spray systems is a contribution of the U.S. NRC and Benton City Technology, Washington. It permits the evaluation of the effect of the spectrum of drop sizes emitted by the spray nozzles, the effect of drop coalescence, and the precise solution of the time dependent diffusion equation in the analysis of spray systems. A set of routines are included for calculating the properties of steam and water according to the ASME Steam Tables, 1967. References: NUREG/CR-0009 and informal documentation. FORTRAN IV; IBM 370/3033.

CHANGES TO THE RSIC DATA LIBRARY COLLECTION

During the month a new data library was added to the data library collection.

DLC-88B/TPASGAM-83

This compilation of decay data for 880 isotopes contains the necessary data for measuring the concentration of photon emitting radionuclides as well as conducting activation analysis using gamma-ray spectrometry. This is the first major revision of the original data, DLC-88/TPASGAM, which had decay data for 748 isotopes. Contributed by Oak Ridge National Laboratory, the data were developed specifically for use with RSIC code package PSR-164/TPASS. It was developed using

DLC-19/DECAYGAM as a starting parent data library and additions and changes were made primarily for fission product and heavy actinides. Alternate versions of the compilation are: first, ordered by nuclide number; second, by energy; and third, by half-life. Two retrieval codes are provided to operate on the file ordered by nuclide number. Reference: Informal Notes. FORTRAN IV; PDP-10 and IBM 3033.

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PRC DELEGATION DISCUSSES NUCLEAR COMMERCE WITH U.S.

An eight-member Chinese (People's Republic of China) delegation, led by *Jia Welwen* of the State Commission for Science and Technology, met with U.S. officials in Washington in July, to discuss the possibility of negotiating a bilateral "cooperative" nuclear agreement between the two nations. The following statement was released by the Chinese before the visit: "The Chinese side does not object to signing a cooperative agreement between the Chinese and American governments on the peaceful uses of nuclear energy. We are willing to study constructive proposals on this issue as well as the cooperative draft agreement proposed by the American side." China's new willingness to restrict the export of its own nuclear materials is a key element in the discussions. With the completion of a final agreement between the two nations, parts and equipment for nuclear power plants constructed in the People's Republic of China (PRC) could be provided by American industry and exchange of information and technology can be formalized. Conflicts over U.S. export regulations have prevented such business negotiations in the past two years.

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: *S. Wynchank,* from Université de Bordeaux, France, to 19 Higgingh Ave., 7700 Newlands, Cape, South Africa; and *Paul S. Lee,* from Purdue University, to Computer Science Corp., Silver Spring, Maryland.

John Ahearne, former NRC commissioner, will become vice president of Resources for the Future, a Washington, D.C. "think tank" organization that studies public policy issues involving natural resources, energy and environmental quality. Ahearne will assume his new position at the end of January 1984 when his current assignment as a management consultant in the Office of the Comptroller General will be completed. Ahearne has a PhD in physics from Princeton University and has spent more than 20 years in public service positions.

Frederick Bernthal, formerly a legislative assistant on the staff of Sen. Howard Baker, has been confirmed by the Senate to replace *John Ahearne* as the fifth NRC commissioner, whose term expired June 30. Bernthal has a B.S. degree from Valparaiso, a PhD from the Univ. of California at Berkeley, and has done advanced studies at Yale Univ. and the Univ. of Copenhagen. He is a member of the American Physical Society and the American Chemical Society.

ASTM Honors Shielders

Ugo Farinelli, ENEA Casaccia (Rome), Italy and **Charles Z. Serpan**, U.S. Nuclear Regulatory Commission, Washington, D. C., were honored with ASTM awards during the "4th ASTM-EURATOM Symposium on Reactor Dosimetry," held at Gaithersburg, Maryland, March 22–26, 1982. The awards cited the two for their merits as former chairmen of the EWGRD and ASTM E.10 respectively. It was under their chairmanship that the joint ASTM-EURATOM Symposia on Reactor Dosmetry were started.

William N. McElroy, Hanford Engineering Development Laboratory, Richland, Washington, was presented the 1982 ASTM Award of Merit at the "11th International Symposium on the Effects of Radiation on Materials," held June 28 in Scottsdale, Arizona. McElroy was cited "for his distinguished service in the advancement of voluntary consensus standardization in the field of nuclear radiation metrology, and for his leadership in ASTM and related international standardization efforts."

Goldstein Named Edison Professor

Herbert Goldstein has been named to the newly established Thomas Alva Edison professorship at Columbia Univ. The professorship, made possible by a $1-million grant from Consolidated Edison Company of New York to the university, is not attached to a single school or department at Columbia, but will be held by professors who focus on energy issues. Goldstein is noted for his scholarship on classical mechanics and reactor shielding.

Visitors to RSIC

During the month of August the following five persons came to visit/use RSIC facilities: *Jack Courtney*, Louisiana State Univ.; *Susan S. Voss*, Air Force Weapons Laboratory, Albuquerque, New Mexico; *Wolfgang Rothenstein*, Technion, Haifa, Israel; *J. Gonnord*, CEA CEN/Saclay Shielding Laboratory, Gif-sur-Yvette, France; and *Larry W. Bell*, U.S. Nuclear Regulatory Commission, Bethesda, Maryland.

UPCOMING MEETINGS, COURSES AND CONFERENCES

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

Fusion Energy Short Course

A 5-day Introductory Short Course on the Physics and Technology of Magnetic Fusion Energy is planned for September 12–16, 1983, at the Univ. of Tennessee (UT) in Knoxville. The course is intended for engineers, managers, planners, university faculty members, and others who wish to obtain a broad overview of magnetic fusion research. The following coverage is planned: the history, development, and basic concepts of fusion research, fundamental limits on fusion reactors and engineering problems of fusion research; alternate fusion reactor concepts, including the Stellarator, RFP, OHTE, and hybrid reactors, and public policy issues of fusion energy.

A 5-day short course on "Fusion Diagnostics" is planned for December 12–16, 1983, also at UT. Registration deadline for the diagnostics course is December 2.

Information for both courses may be obtained from J. Reece Roth, 409 Ferris Hall, Univ. of Tennessee, Knoxville, TN 37996-2100 (phone 615-974-3461).

ANS Meet Features Radiation Protection & Shielding Sessions

Sessions of interest to the international shielding community are planned for the Oct. 30–Nov. 3, 1983, ANS Meeting to be held in San Francisco. Topics covered under Radiation Protection and Shielding are as follows: Dosimetry Techniques and Evaluation of Reactor Pressure Vessel Damage; Transient Radiation Worker Monitoring; Methods and Data for Radiation Protection and Shielding; LWR Radiation Source Models and Measurements; and Fusion Neutronics and Shielding. General Fusion Studies and Fusion Reactor Applications and Concepts will be covered under the general heading "Fusion Energy."

India Plans Radiation Physics Symposium

The Indian Society for Radiation Physics, in collaboration with several universities and laboratories, has organized the fifth in a series of Biannual National Symposia on Radiation Physics to be held November 21–24, 1983, in Calcutta, India. The program includes papers on the following topics: Radiation Sources and Machines; Radiation Interaction Data, Basic as well as Processed; Radiation Transport – Models, Methods, and Codes; Radiation Physics Applications in Medicine, Industry, and Agriculture; Radiation Biophysics; Radiation Instruments & Methods; and Radiation Physics Curriculum. The proceedings will be published. Additional information may be obtained from G. Muthukrishnan, Variable Energy Cyclotron Centre, 1/AF, Bidhan Nagar, Calcutta-700 064.

Space Symposium Planned

The "1st Symposium on Space Nuclear Power Systems" will be held January 10–13, 1984, in Albuquerque, New Mexico. The objective of the symposium is to provide a national forum for stimulating discussion, sharing information and transferring technology among the planners and potential users of space systems. It is sponsored by the Univ. of New Mexico with cosponsorship from the Air Force Weapons Laboratory, Space Technology Center, and Wright-Aeronautical Laboratory; BDM Corp.; DARPA: EG&G Idaho, Inc.; General Atomics Technologies; General Electric Co.; Jet Propulsion Laboratory; Lovelace Inhalation Toxicology Research Institute; LANL; Martin-Marietta Aerospace Company; NASA–Headquarters; ORNL; Rockwell International; Sandia National Laboratory (SNL); U.S. Department of Energy (U.S.-DOE); and the U.S. House of Representatives.

Session topics and chairmen are as follows: *Reactors* (William Rankin, LANL, and Hal Snyder, G.A. Technologies); *Programmatics & Applications* (James Kelley, Jet Propulsion Lab, and Richard Dahlberg, G.A. Technologies); *Safety and Reliability* (Lou Cropp, SNL, and Gary Bennett, U.S.-DOE); *Thermal Management* (Robert Wick, AF Weapons Lab., and Tom Mahefkey, WPWAL/PWOL Wright-Patterson AFB); *Power Systems Integration & Control* (Gail Klein, Jet Propulsion Lab., and James Masson, Martin-Marietta Aerospace Co.); *System Concepts* (James Lee, AF Weapons Lab., and David Buden, LANL); and *Power Conversion/ Conditioning & Materials* (Jerry Stapher, Jet Propulsion Lab., and Roy Cooper, Jr., ORNL). The *Poster Sessions* will be chaired by Patrick McDaniel, SNL.

In conjunction with the symposium, a short course on Space Power Systems will be held January 9–10, 1984. The course is planned for individuals involved in the field of space power technology with at least an undergraduate degree in science, math, or engineering.

Additional information about both the conference and the short course may be obtained from Carlota Kli-

mas, New Mexico Engineering Research Inst., Campus P.O. Box 25, Univ. of New Mexico, Albuquerque, NM 87131 (phone 505-846-0215).

Calls for Papers

Your attention is called to the following calls for papers.

ANS Nuclear Methods Topical

The program announcement and call for papers has been issued for the "5th International Conference on Nuclear Methods in Environmental and Energy Research," to be held April 2–6, 1984, in Mayaguez, Puerto Rico. The conference, sponsored by ANS, American Chemical Society, U.S.-DOE, Univ. of Puerto Rico-Recinto, Univ. of Mayaguez, and the Univ. of Missouri-Research Reactor Facility, is to provide an exchange of information on developments in nuclear and atomic analytical methods as well as the application of such methods to research on environmental, energy, biological and medical problems. Primary emphasis will be on activation analysis and gamma-ray spectroscopy with coverage on other nuclear methods such as stable and radiotracer and nuclear track techniques and atomic methods such as x-ray fluorescence. Sessions will be organized around both methods and applications with topics in gamma-ray and x-ray spectroscopy, soft-ware, mathematical methods for data analysis, nuclear and atomic methology, and methods and applications related to environmental, energy, biological and medical research.

Contributed papers are solicited for the conference. Summaries of between 700–900 words should be submitted no later than **October 1, 1983,** to James R. Vogt, Univ. of Missouri, 214 Research Reactor, Columbia, MO 65211 (phone 314-882-4211). Authors of those papers accepted will be expected to submit camera-ready manuscripts at the conference. Additional information about conference arrangements may also be obtained from J. R. Vogt at the same address.

ANS Meet on Fission Products & Source Term Research

"Fission Product Behavior & Source Term Research," will be discussed in a conference planned for July 15–19, 1984, in Snowbird, Utah. The meeting is sponsored by the Idaho Section of the ANS and co-sponsored by the Electric Power Research Institute, ANS Nuclear Reactor Safety Division, ANS Isotope and Radiation Division, ANS Materials Science and Technology Division, ANS Radiation Protection and Shielding Division, the Canadian Nuclear Society, and the Atomic Energy Society of Japan.

Fission product behavior and source term research is a topic which has been extensively investigated since the Three-Mile Island accident in 1979. Research results from the USA, Canada, Germany, England, France, Italy, Japan, Scandinavia, and other countries active in this field will be presented by the participants.

Papers are solicited on these topics: Release from Fuel Rods, Transport and Deposition in the Primary System, Transport and Deposition in the Containment, Release from the Containment, Fission Product and Aerosol Monitoring Techniques, and Fission Product and Aerosol Chemistry. The deadline for 1200-word summaries is **October 3, 1983;** author notification will be in January 1984. Four copies of summaries should be sent to Richard R. Hobbins, Assistant Technical Program Committee Chairman, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415 (phone 208-526-9545).

Further information about the meeting may be obtained from W. J. Quapp, Assistant General Chairman, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415 (phone 208-526-9606).

RP&S Topical Meet

A "Topical Meeting on Reactor Physics & Shielding" will be held September 17–19, 1984 at the Americana Congress Hotel in Chicago, Illinois. It is sponsored by the ANS Reactor Physics Division, the ANS Radiation Protection and Shielding Division, and the ANS Chicago Section. Objectives of the meeting are to review internationally the current status of reactor physics and shielding as well as offer an opportunity for presentation of significant new work. Both thermal and fast reactors will be covered.

Papers are solicited in the following areas: Operational Experience and Design (Thermal and Fast Reactor Physics); Operational Experience and Design (Shielding Dosimetry); Developments in Reactor Theory, in Shielding, and in Calculational Methods; Cross Sections for Reactor Physics and Shielding; Current Problems in Shielding; Measurement and Calculation of Reactor Parameters; and Safety-Related Physics. **March 16, 1984** is the deadline for 900-word summaries which should be sent to David Wade, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, IL 60439 (phone 312-972-6048). Those summaries accepted will be reproduced and distributed at the meeting; they are to be typed single-spaced and in a format suitable for reproduction on 8½ by 11-in paper. Camera-ready papers should be available on September 17, 1984.

The organizing committee for the meeting includes: General Chairman Leo G. LeSage, assisted by Samit K. Bhattacharyya, both of ANL; Technical Program Co-Chairmen are David C. Wade, ANL, and Gerald P. Lahti, Sargent & Lundy.

Calendar

Your attention is called to the following additional events.

September 1983

4th Pacific Basin Nuclear Conference, September 11–15, 1983, Vancouver, Canada, sponsored by the Canadian Nuclear Association and co-sponsored by the American Nuclear Society. Contact: 4th Pacific Basin Nuclear Conf., Canadian Nuclear Association, 111 Elizabeth St., 11th Floor, Toronto, Ontario, Canada M5G 1P7.

Environmental, Safety and Health Considerations Associated with Fusion Energy Systems Seminar, September 14, 1983, Germantown, Maryland. Contact: Boyd Shultz, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37830 (phone 615-576-3406).

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

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

Lifespan Radiation Effects Studies in Animals – What Can They Tell Us? (22nd Hanford Life Sciences Symposium), September 27–29, 1983, Richland, Washington, sponsored by U.S. Department of Energy, Battelle Memorial Institute, and Pacific Northwest Laboratories. Contact: Patricia M. Bresina, Biology & Chemistry Dept., Battelle, Pacific Northwest Laboratories, Richland, WA 99352 USA.

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

October 1983

International Seminar on Indoor Exposure to Natural Radiation and Related Risk Assessment, October 3–5, 1983, Capri, Naples, Italy, sponsored by the Commission of the European Communities, the Dept. of Environmental Protection and Health of the National Committee for Research and Development of Nuclear and Alternative Energy, and the Italian Association of Radiation Protection. Contact: J. Sinnaeve (DG XII/F/1), Secretariat, Internatl. Sem. Indoor Exposure to Natural Radiation and Related Risk Assessment, Commission of the European Communities, 200 rue de la Loi, B-1049 Brussels, Belgium.

Development and Use of Numerical and Factual Data Bases, October 5–6, 1983, Gaithersburg, Maryland. Contact: AGARD, 7 Rue Ancelle 92200, Neuilly Sur Seine, France.

23rd National Congress of the Italian Radiation Protection Association, October 5–8, 1983, Capri, Italy. Contact: A. Moccaldi, CNR, Via Serchio 8, I-00198 Rome, Italy.

Meeting of the Nuclear Physics Division of the American Physical Society, October 13–15, 1983, Notre Dame, Indiana. Contact: American Physical Society, 335 E. 45th St., New York, NY 10017.

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

Workshop on Nuclear Data and Reactors, October 17–November 11, 1983, Miramare, Italy, sponsored by the International Center for Theoretical Physics. Contact: International Center for Theoretical Physics, P.O. Box 586, I-34100 Trieste, Italy.

Neutron Exposure and Radiological Protection – Some Limitations, October 18, 1983, London, United Kingdom, sponsored by the Society for Radiological Protection. Contact: J. H. Martin, Dept. of Medical Biophysics, Blackness Laboratory, Univ. of Dundee, Dundee DD1 4HN, Scotland, United Kingdom.

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

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

10th Symposium on Engineering Problems in Fusion Research, October 24–28, 1983, Atlantic City, New Jersey. Contact: Charles W. Bushnell, Princeton Plasma Physics Laboratory, P.O. Box 451, Princeton, NJ 08544 (phone 608-683-3051).

ANS Winter Meeting, October 30–Nov. 4, 1983, San Francisco, California. Contact: A. Philip Bray, Vice President, Nuclear Power Systems Div., General Electric Co., 175 Curtner Ave. - MC 802, San José, CA 95125 USA.

Atmospheric Radiation, October 31–November 3, 1983, Baltimore, Maryland, sponsored by the American Meteorological Society. Contact: American Meteorological Society, 45 Beacon Street, Boston, MA 02108, USA.

November 1983

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

Criticality Accident Dosimetry Training Course, November 14–18, 1983, Oak Ridge, Tennessee, sponsored by ORNL. Contact: C. S. Sims, Oak Ridge National Laboratory, Bldg. 7710, P.O. Box X, Oak Ridge, TN 37830 (phone 615-574-5851).

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

International School of Radiation Damage and Protection: Biological Effects and Dosimetry of Non-Ionizing Radiation, November 15–25, 1983, Erice, Italy, sponsored by the Italian Radiation Protection Association, Italian Ministry of Education, Italian Ministry of Scientific and Technological Research, and Istituto Superiore de Sanita. Contact: Sol M. Michaelson, Univ. of Rochester, Medical Centre, 601 Elmwood Ave., Rochester, NY 14642.

December 1983

Annual Meeting of the Sociedad Nuclear Espanola, December 5–7, 1983, Seville, Spain. Contact: Sociedad Nuclear Espanola, Estabanez Calderon, 7 - 9F, Madrid-20 (phone 279 75 00 Ext. 94).

10th Symposium on Fusion Engineering, December 5–9, 1983, Philadelphia, Pennsylvania, sponsored by the IEEE and Princeton Univ. Contact: Charles W. Bushnell, Princeton Plasma Physics Laboratory, P.O. Box 451, Princeton, NJ 08544 (phone 608-683-3051).

January 1984

Workshop on Nuclear Model Computer Codes, January 16-February 3, 1984, Trieste, Italy, sponsored by IAEA. Contact: International Centre for Theoretical Physics, Workshop of Nuclear Model Computer Codes, P.O. Box 586, I-34100 Trieste, Italy (phone 224281-6).

May 1984

6th Congress of the International Radiation Protection Association, and *Exhibition,* May 7–12, 1984, Berlin, West Germany. Contact: R. Neider, Bundesanstalt für Materialprüfung (BAM), Unter den Eichen 87, D-1000 Berlin 45.

June 1984

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

ANS Annual Meeting, June 3–8, 1984, New Orleans, Lousiana. Contact: Thomas H. Row, ORNL, Bldg. 4500 SN, MS-S-178, Oak Ridge, TN 37830 USA.

October 1984

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

November 1984

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

LITERARY NOTES

Your attention is called to the following publications.

Transport Theory and Statistical Physics Has New Editor

The international vehicle for work on analytical methods in neutron transport theory, *Transport Theory and Statistical Physics*, which publishes papers emphasizing fundamental research in areas ranging from neutral particle transport to macroscopic transport phenomena, has a new editor, **Paul Nelson,** of Texas Tech Univ. *Transport Theory and Statistical Physics* reports on such diverse matters as charged particle transport and radiative transfer, and stresses many currently neglected fundamental areas including novel computational methods, convergence theorems, and mathematical existence and uniqueness results. It also includes occasional review articles designed to bridge various specialty areas.

The editor welcomes manuscript contributions to *Transport Theory and Statistical Physics.* Those accepted for publication will be published promptly. For complete details regarding manuscript preparation and submission contact Paul Nelson, Dept. of Mathematics, Texas Tech Univ., Lubbock, Texas 79409.

NRRPT Textbook Published

Basic Radiation Protection Technology, by Daniel A. Gollnick, is designed for use by those radiation protection technologists studying for the NRRPT examination. Based on information supplied by the NRRPT Exam Panel, the book covers all areas included in the

exam. It is also suitable as a broad, in-depth introduction to radiation protection for technical personnel entering the field, and as a reference for the experienced professional. Order from Pacific Radiation Corporation, 9827 Daines Dr., Temple City, CA 91780; phone 213-286-8222.

AUGUST 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

AECL-7428 Sampling from the Normal and Exponential Distributions., . . Chaplin, K.R.; Wills, C.A., . . January 1982, . . NTIS (U.S. Sales Only), PC A03/MF A01

AEEW-R-1412 An Outline Review of Numerical Transport Methods., . . Budd, C., . . January 1981, . . UKAEA Atomic Energy Establishment, Winfrith

BNL-32874; CONF-830311-88 High-Energy Gamma-Ray Beams from Compton-Backscattered Laser Light., . . Sandorfi, A.M.; LeVine, M.J.; Thorn, C.E.; Giordano, G.; Matone, G., . . 1983, . . NTIS, PC A02/MF A01

CEA-CONF-5708 Some Efficient Lagrangian Mesh Finite Elements Encoded in ZEPHYR for Two Dimensional Transport Calculations., . . Mordant, M., . . April 1981, . . CEA Centre d'Etudes de Limeil, 94 - Villeneuve-Saint-Georges (France), . . International Seminar on the Role of Finite Element Methods in Radiation Physics, London, UK, 23-24 April 1981.

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