RSIC Newsletter

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When a man has put a limit on what he will do, he has put a limit on what he can do.—Charles M. Schwab

8TH INTERNATIONAL CONFERENCE ON RADIATION SHIELDING PLANNED FOR APRIL 1994

In the course of planning the 1994 American Nuclear Society Radiation Protection and Shielding Division Topical, a decision was made to expand the topical meeting into the *8th International Conference on Radiation Shielding (ICRS8)*. As a result of discussions between Dan Ingersoll and colleagues in the international radiation shielding community, a consensus developed that it would be appropriate to explore the possibility of holding ICRS8 in the United States. The timing of the 1994 Topical and the willingness of the organizers to expand its scope provided the impetus for planning ICRS8 in earnest. ICRS7 was held in England in 1988, ICRS6 in Japan in 1983, and ICRS5 in Tennessee in 1977.

The North Texas Section of the ANS agreed to expand the scope at the request of the ANS RPS Executive and Program Committees. The meeting is planned for the week of April 24, 1994, in Arlington, Texas (near Dallas). The General Chairman is Dick Rubin of TU Electric (phone 214-812-8247) and the Program Committee Chair is Nolan Hertel of the University of Texas (phone 512-471-3085. R. W. Roussin, Radiation Shielding Information Center (phone 615-574-6176), will act as International Liaison.

The technical program and organizing committees are being expanded to include members from the international community. Additional co-sponsors will also be sought from other countries. A special meeting of the ICRS8 technical program committee will be held during the Winter ANS meeting in Chicago to lay out the schedule and target special topics. Individuals and organizations interested in supporting or helping in the organization of ICRS8 are invited to contact one of the individuals listed above.

Additional publicity will be provided as planning proceeds. The *RSIC Newsletter* will also be used to provide information about deadlines and schedules. We expect the meeting to be as successful as previous ones in the series and we encourage your participation.

R. Roussin
International Liaison, ICRS8

OECD Nuclear Energy Agency Relocates

On July 10, 1992, the Nuclear Energy Agency Data Bank moved from its location in Saclay to new quarters in Issy-les-Moulineaux. Since a number of RSIC participants also deal with the NEA Data Bank the new address is given here followed by a list of important phone numbers.

OECD NEA Data Bank
Le Seine Saint-Germain
12, boulevard des Iles
F-92130 Issy-les-Moulineaux
France

The OECD Switchboard number is 33 (1) 45 24 82 00; the telefax number is 33 (1) 45 24 11 10, and the telex number is OCDE 620 160 F.

Principal telephone numbers:

K. Uematsu, Director General	1000
S. Thompson, Deputy Director General	1002
J. Rosen, Director for Science and Computing	1006

Data Bank Services

N. Tubbs	1070

Nuclear Data Services

C. Nordborg	1092
M. Konieczny	1085

Computer Program Services

E. Sartori	1072
S. Greenstreet	1077

Chemical and Environmental Services

I. Puigdomenech	1083
S. Koo-Oshima	1084

On-Line Services

P. Nagel	1082
R. Posca	1086

Computer Systems

L. Pellegrino	1095, 1096

General Calls **1071**

A skeleton technical staff will remain in Saclay to work the computer until the installation of the new computer in Issy-les-Moulineaux is completed in September. If you are unable to reach a staff member on a new number, please try the previous number in Saclay.

Electronic Networks The electronic networks for the new address will be fully operation in mid October.

BITNET/EARN	*name*@FRNEAB51
INTERNET	not known
X25 (Transpac)	(1) 92 160 775
X-400 (Atlas)	not known
PHYSNET/HEPNET	discontinued until further notice

CHANGES TO THE COMPUTER CODE COLLECTION

During the month, six changes were made to the Computer Code Collection. Four new code systems were packaged and added to the collection, an existing code package was replaced with a newly frozen version, and an existing code package was extended with a new hardware version. Four changes resulted from foreign contributions.

CCC-481/VPI-NECM

The International Atomic Energy Agency (IAEA), Vienna, Austria, through the OECD NEA Data Bank, Gif-sur-Yvette, France, contributed a new hardware version of this code system for personal computers. VPI-NECM is a nuclear engineering computer system of modules for in-core fuel management analysis. The system consists of six independent programs designed to calculate:(1) FARCON — neutron slowing down and epithermal group constants, (2) SLOCON — thermal neutron spectrum and group constants, (3) DISFAC — slow neutron disadvantage factors, (4) ODOG — solution of a one group neutron diffusion equation, (5) ODMUG — three group criticality problem, and (6) FUELBURN — fuel burnup in slow neutron fission reactors. The new version (C) runs on PC 386 or 486 computers with a math-coprocessor. The Microsoft Fortran 5.0 compiler under MSDOS 4.01 was used to create the executables included in the package. One DS/HD (1.2 MB) diskette is required for transmittal of the source files, executables, data files and sample cases. References: Collection of informal documents (1983–1984). Fortran IV; CDC (A) and Vax(B). Fortran 77; PC 386 and PC 486.

CCC-527/LISA4

A newly frozen version of this code system was contributed by the Joint Research Centre, Ispra, Italy, and the Japan Atomic Energy Research Institute (JAERI) of Tokai-Mura, through the NEA Data Bank. LISA4 estimates radiation exposures from the disposal of nuclear waste in geological formations. The code analyzes different release scenarios from waste repositories situated in sedimentary formations (argillaceous strata and seabed sediments) and includes the following functions: decay chain evolution of the source term as a function of time; radionuclide release from the repository and migration through porous media by diffusion and advection; radionuclide dispersion into fresh water or sea-water bodies; pathways to man; and dosimetry. The Latin Hypercube Sampling technique is employed. LISA4 runs on the Amdahl 470, IBM 3033, Vax family, and Sun workstations. One DS/DD diskette is required for transmittal. References: EUR 13922 EN, EUR 13923 EN, and EUR 13924 EN (1991). Fortran 77; Amdahl, IBM, VAX, Sun.

CCC-605/3DDT

Los Alamos National Laboratory (LANL), New Mexico, through the DOE Energy Science and Technology Software Center, Oak Ridge, Tennessee, contributed this three-dimensional (x-y-z or r-theta-z) multigroup, diffusion theory code system for use in fast reactor analysis. The code computes k-eff or performs criticality searches on reactor composition, time absorption, and reactor dimensions by either the regular or adjoint flux equations. Material burnup and fission product buildup can be computed for specified time intervals, and criticality searches can be performed during burnup to compensate for fuel depletion and fission product growth. The code runs on CDC 6600 computers running SCOPE 3.2 and is written in Fortran IV. One DS/HD diskette is required to transmit the package. Reference: LA-4396 (Sept. 1970). Fortran IV; CDC 6600.

CCC-606/ANITA

The Commission of the European Communities, Joint Research Center, Ispra, Italy, through the NEA Data Bank, contributed this code system for the analysis of neutron induced transmutation and activation. ANITA computes the radioactive inventory of a material subject to neutron irradiation, continuous or stepwise. It provides activity, atomic density, decay heat, energy of decay gamma-rays, and ingestion hazard of each nuclide. It also computes total activity, decay heat, contact dose

equivalent, gamma-ray spectra, and other relevant parameters, for the irradiated material versus cooling time. A decay data library of about 1280 stable or unstable nuclei taken from several sources and the REAC-ECN-5 activation cross-section library developed at ECN-Petten are included in this code system. This data base allows one to perform calculations for all the elements with an atomic number smaller than 84. The cross-sections and the decay data were developed for application to fusion technology. ANITA was developed on the Amdahl 460/V8 computer. It has been tested on both the IBM 3090 running MVS/XA and the IBM RISC 6000 running AIX. Two DS/HD (1.2 MB) diskettes are required for transmittal. Reference: EUR 12622 EN (1989). Fortran 77; Amdahl, IBM 3090 and RISC 6000.

CCC-607/PFPL

Savannah River Laboratory, Aiken, South Carolina, through the DOE Energy Science and Technology Software Center, contributed the PFPL code system. PFPL is an interactive transport and diffusion program developed for real-time calculation of the location and concentration of toxic or radioactive materials during an accidental release. Deposition calculations are included. PFPL, which simulates either instantaneous (puff) or continuous (plume) releases, was developed at Savannah River for emergency response calculations. Binary data files are provided for demonstration. The code was developed on the DEC VAX11/780 under VMS 3.4 and is written in Fortran 77. Vax/VMS system services and Fortran extensions are used extensively. Graphic output on a Tektronix terminal requires the proprietary Tektronix PLOT10 Interactive Graphics Library. Reference: DP-1595 (May 1981). Fortran 77; Vax11/780.

PSR-318/MIXEN

The Institute of Advanced Studies, Brazil, contributed this code system to replace files 4 and 6 of the Evaluated Nuclear Data File Version 6 (ENDF-6) by files 4 and 5 of ENDF/B-IV. This procedure will allow several nuclear data processing systems which were not designed to process the new double-differential data of ENDF-6 to be used to process the newly evaluated resonance parameters and cross sections given in files 2 and 3 of ENDF-6 and the angular distributions given in files 4 and 5 of ENDF/B-IV. MIXEN was written in Fortran V and developed on a CDC CYBER 170/750 computer. It was tested on the IBM RISC 6000 using the XLF compiler. The package is available on one DS/HD diskette. Reference: IEAv-NT-012/91 (Dec. 1991). Fortran V; CDC and IBM RISC.

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.

Calls for Papers

ANS Environmental Transport and Dosimetry Topical

The ANS *Topical Meeting on Environmental Transport and Dosimetry* will be held September 1–3, 1993, at the Omni Hotel in Charleston, South Carolina. The meeting is sponsored by the Environmental Sciences Division of the ANS and the Savannah River Section, with cosponsorship from other ANS divisions and the U.S. Department of Energy. The meeting will provide a forum for recent advances in understanding transport, diffusion, and dosimetric effects of

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *Richard K. Disney*, Westinghouse Advanced Programs, Pennsylvania; *Lucia Tallone* and *Andrea Ottolenghi* , University of Milan, Italy; and *A. M. Al-Affan*, Velindre Hospital, Cardiff, Wales.

radionuclides in the environment. Papers are requested on measuring, modeling, and predicting transport and dispersion of radionuclides in the atmosphere, hydrosphere, and ocean on all scales; deposition and resuspension of radionuclides; development and application of low-level measurement and counting techniques; external, inhalation, and ingestion dosimetric pathways for environmental exposure, and model uncertainties. The deadline for submitting a 1000–1500-word extended abstract is **January 15, 1993**. Further information may be obtained from Program Chair Robert P. Addis, Westinghouse Savannah River Company, Savannah River Technology Center, Bldg. 773-A, Aiken, SC 29808-0001 (phone 803-725-3325; Fax 803-725-4233).

Physics and Methods in Criticality Safety The ANS Nuclear Criticality Safety Division and the Oak Ridge/Knoxville Section are sponsoring the *1993 Topical Meeting on Physics and Methods in Criticality Safety*, to be held September 19–23, 1993, at the Sheraton Music City Hotel in Nashville, Tennessee. The meeting will showcase advances in the understanding of the physics of criticality and developments in the methods used for ensuring nuclear criticality safety. Subject categories for papers include: validation practices, including benchmarking of calculational tools; adequacy (applicability) of available critical experiment data for validation, including the need for new experimental measurement programs and facilities and the need for experimental characterization of additional fissile systems; improvements in computer codes and cross-section data; advances in research on the physics of criticality; physics of parameters that affect criticality; applications, including physics and experimental issues, criticality accident modeling, new and unusual applications areas, physics of new applications, unresolved and controversial issues, and new experimental techniques. The deadline for submitting a 100-word abstract and a form stating intent to participate is **October 25, 1992**. Further information may be obtained from R. Michael Westfall, General Chair, Martin Marietta Energy Systems, Inc., Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6370 (Fax 615-476-3513).

Emerging Nuclear Energy Systems (ICENES '93) The Japanese Atomic Energy Research Institute (JAERI) will host the *7th International Conference on Emerging Nuclear Energy Systems (ICENES '93)*. The conference will be held September 20–24, 1993, in Makuhari, Chiba, Japan. Papers are solicited on the following topics:

- Energy production by fusion and its utilization; magnetic confinement fusion, inertial confinement fusion, neutron-free fusion, muon-catalyzed fusion, electrostatic confinement fusion, cold fusion, fusion reactors, fission-fusion hybrid reactors, etc.
- Innovative energy production by fission and its utilization; advanced fast reactors, advanced breeders, advanced high-conversion reactors, advanced inherent safe reactors, radioactive waste burner reactors, non-electric power reactors, small reactors, space reactors, innovative power generation concepts, etc.
- Application of accelerators for energy systems; TRU transmuters, fission product transmuters, energy production, fuel production, high energy nuclear data, etc.
- Innovative energy storage and conversion; laser isotope separation, innovative hydrogen production, anti-matter production and storage, direct energy conversion, etc.
- Other innovative energy systems, and
- General aspects; nuclear energy resources, safety and environmental issues, public acceptance., etc.

The deadline for submitting a synopsis is **May 1, 1993**. Further information may be obtained from T. Hiraoka, ICENES Secretariat, Dept. of Reactor Engineering, Japanese Atomic Energy Research Institute, Tokai-mura, Ibaraki-ken 319-11, Japan (phone 81 292-82-5517 or 5305; Fax 81 292-82-6122).

Calendar

Your attention is directed to the following events of interest.

November 1992

International Low-Level Waste Conference, Nov. 9–12, 1992, Baltimore, Maryland, sponsored by the Electric Power Research Institute. Contact EPRI International LLW Conference '92, c/o Special D Events, P.O. Box 878, Troy, MI 48099 USA.

Radiation Physics Conference, Nov. 14–18, 1992, Kena, Egypt. Contact: Prof. A. H. El-Kamel, Vice President-Assit University, Kena Branch, Kena, Egypt (Fax 096-327-706).

1992 ANS/ENS International Meeting, Nov. 15–20, 1992, Chicago. Contact: General Chair James D. Shiffer, Pacific Gas & Electric Co., 77 Beale St., San Francisco, CA 94106 (phone 415-973-4684).

14th Low-Level Radioactive Waste Management Conference, Nov. 18–20, 1992, Phoenix, Arizona. Contact: Kathleen Asbell, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415-3960 (phone 208-526-8330; Fax 208-526-9165).

Basic Radiation Safety & Management, Nov. 19–20, 1992, Chicago, Illinois, a seminar presented by Stan A. Huber Consultants, Inc. Contact: Stan A. Huber Consultants, Inc., 200 N. Cedar Road, New Lenox, IL 60451 (phone 815-485-6161; Fax 815-485-4433).

December 1992

Radioactive Waste Management, Dec. 7–11, 1992, Charlotte, North Carolina. Contact: Linda S. Woodson, Woodson Associates, Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751; Fax 301-990-6153).

January 1993

Managing Nuclear Emergencies, Jan. 11–15, 1993, Phoenix, Arizona. Contact: Linda S. Woodson, Woodson Associates, Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751; Fax 301-990-6153).

February 1993

HEART, Feb. 1–5, 1993, Naval Training Center, Orlando, Florida, sponsored by the Department of Defense and the Department of Energy. Contact: Arne Kalma, S-Cubed, 3020 Callen Road, San Diego, CA 92121 (phone 619-450-2439).

Practical Radiation Shielding, Feb. 1–5, 1993, Atlanta, Georgia, a course sponsored by Shonka Research Associates, Inc. Contact: Shonka Research Assoc., 4939 Lower Roswell Road, Suite 106, Marietta, GA 30068 (phone 404-509-7606).

Maintenance/Repair of Oil Filled Lead Glass Shielding Windows, Feb. 9–11, 1993, Kent, Washington, sponsored by Hot Cell Services. Contact: Ronald A. Campbell, Hot Cell Services Corp., 22626 85th Place South, Kent, WA 98031 (phone 206-854-4945; Fax 206-854-4947).

Internal Dosimetry, Feb. 9–12, 1993, Las Vegas, Nevada. Contact: Linda S. Woodson, Woodson Associates, Inc., P.O. Box 2665, Gaithersburg, MD 20886 (phone 301-990-0751; Fax 301-990-6153).

March 1993

Occupational and Environmental Radiation Protection, Mar. 22–26, 1993, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

April 1993

29th Annual Meeting of the National Council on Radiation Protection and Measurements, Apr. 7–8, 1993, Arlington, Virginia. Contact: NCRP, 7910 Woodmont Avenue, Suite 800, Bethesda, MD 20814.

Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Apr. 19–23, 1993, Karlsruhe, Germany. Contact: H. Kuesters, KFK/INR, Postfach 3640 D-W-7500 Karlsruhe 1, Germany, or W. Werner, GRS, D-W-8046 Garching, Germany.

International High-Level Radioactive Waste Management Conference, Apr. 25–29, 1993, Las Vegas, Nevada, sponsored by the ANS, the U.S. Dept. of Energy, and the American Society of Civil Engineers. Contact: Billy Cole, E. R. Johnson Assoc., 10461 White Granite Drive, Suite 204, Oakton, VA 22124 (phone 703-359-8355; Fax 703-359-0842).

4th Topical Symposium on Emergency Preparedness and Response, to be held April 26–29, 1993, in Long Island, New York. Contact: Brant Aidikoff, Technical Program Chairman, LIANS, Box 436, Upton, New York 11973 (phone 516-436-4256).

May 1993

Advanced Workshop on Occupational and Environmental Radiation Protection, May 10–14, 1993, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

Management and Disposal of Radioactive Waste, May

24–28, 1993, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

June 1993

Safewaste '93: The Final Disposal of Nuclear Waste, June 14–18, 1993, Avignon, France, sponsored by the ANS and the European Nuclear Society. Contact: Pierre Tanguy, EDF, Direction Generale 32, Rue de Monceau, 75384 Paris Cedex 08, France.

July 1993

Nuclear and Space Radiation Effects Conference, July 19–23, 1993, Snowbird, Utah. Contact: P. V. Dressendorfer, Sandia National Laboratories, Division 2535, P.O. Box 5800, Albuquerque, NM 87185.

August 1993

SMiRT 12, Structural Mechanics in Reactor Technology, Aug. 15–20, 1993, Stuttgart, Germany. Contact: Prof. Karl Kussmaul, SMiRT 12, Stätliche Materialprüfungsanstalt (MPA), University of Stuttgart, Pfaffenwaldring 32, 7000 Stuttgart 80 Germany (phone 49-711-685-3582; Fax 49-711-685-3144 or 2635).

Topical Meeting on Environmental Transport and Dosimetry, Aug. 31–Sept. 3, 1993, Charleston, South Carolina, sponsored by the ANS. Contact: Robert Addis, Savannah River Laboratory, Environmental Transport Group, Bldg. 773-A, Box 616, Aiken, SC 29808 (phone 803-725-3325).

8th ASTM-EURATOM Symposium on Reactor Dosimetry, Aug. 29–Sept. 3, 1993, Vail, Colorado. Contact: Patrick J. Griffin, Div. 6522, Sandia National Laboratories, Albuquerque, New Mexico 87185 (phone 505-845-9121). See call for papers in September 1992 *RSIC Newsletter*.

May 1994

9th Pacific Basin Nuclear Conference, May 1–5, 1994, Sydney, Australia. Contact: Australian Nuclear Association, P.O. Box 445, Sutherland, NSW 2232, Australia.

SEPTEMBER 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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Nucl. Sci. Eng., 110, 445-454. . *On the Design of a Cold Neutron Source*. . Clark, D.D.; Ouellet, C.G.; Berg, J.S. . 1992

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ORNL/TM-11917. . *Analysis of the Spring-1990 Two-Meter Box Test Bed Experiments Performed at the Army Pulse Radiation Facility (APRF)* . . Johnson, J.O.; Drischler, J.D.; Barnes, J.M. . August 1992

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