

RSIC Newsletter



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

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No. 244

March 1985

We are tomorrow's past. — Mary Webb

MORSE-CGA Workshop Plans Progress

A significant number of our readers responded favorably to the MORSE-CGA Workshop Survey in the December 1984 *RSIC Newsletter*. Plans are being made for a 4-day workshop beginning Monday, June 17, 1985, in Oak Ridge, Tennessee.

The computing technology to be featured in the workshop will be a newly frozen version, MORSE-CGA, which includes considerable development beyond that formerly packaged in RSIC. It should be noted that the workshop is planned to cover this specific code system. There are no plans to assess the state of the art of Monte Carlo techniques beyond that included in MORSE.

The survey form is again attached on the back of this page. If you are interested in attending and have not already done so, please complete the form and return it to RSIC as soon as possible. The completed survey form will be used to establish a mailing list for those who indicate interest in the workshop.

To date, respondents fall into three experience level groups of about equal size: "little or none," "some," and "substantial." The first day of the workshop will contain introductory material geared toward those with little or no MORSE-CG experience. After the introduction, 1½ days will be devoted to the new array geometry aspects of the code, MARS and JUNEBUG. MARS geometry will be discussed Tuesday morning and input and user routines needed for its use will be covered on Tuesday afternoon. The JUNEBUG plotting package for MARS geometry will be featured on Wednesday morning. The next phase of the workshop, Wednesday afternoon and Thursday morning, will provide an in-depth look at special MORSE topics, such as cross sections, criticality, adjoints, DOMINO coupling, albedo, and collision density plots.

The workshop will conclude with a Thursday afternoon session on realistic sample problems.

RSIC NOTES

We encourage you to remove and copy the form on the back of this newsletter. When you contribute computing technology to RSIC, please send a completed copy of the form with your tape. The information shown on the form facilitates the transfer of the technology into the RSIC collection.

The ORNL computer center will soon implement a tape management system which will require strict compliance with data set naming conventions and an authorized computer user to be identified as the owner of all labeled tape files. Whenever possible send us nonlabeled tapes. If you must use labeled tapes, please contact us so that we can suggest data set names which will be valid on our system.

IF YOU CHANGE YOUR ADDRESS, please notify us (including Building and Room No. where needed). *Third Class Mail* is returned to us at our expense if the addressee has moved. If your mail is returned, your name will be deleted from our distributions until we hear from you.

RADIATION SHIELDING INFORMATION CENTER

The MORSE-CGA Code

Week of June 17-21, 1985, at Oak Ridge, Tennessee

Name: _____

Citizenship: _____

Organization: _____

Full Mailing Address: _____

Phone: Commercial: _____ FTS: _____

Please indicate by check mark or specific designation your experience and background in the following areas:

	MORSE-CG code system	Other Monte Carlo codes	General trans- port and Monte Carlo theory	Multigroup cross section process- ing and use	Computer operating systems
little or none	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____
some	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____
substan- tial	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____

Do you have any general or specific areas of interest you would like to have presented in the course?

CHANGES TO THE COMPUTER CODES COLLECTION

During the month two changes were made to the computer codes collection. A new code system was contributed by the Fed. Rep. of Germany, and an existing code package was updated.

CCC-470/TP2

This code system for the calculation of reactivity and kinetic parameters by two-dimensional neutron transport perturbation theory was contributed by Kernforschungszentrum Karlsruhe, Fed. Rep. Germany. It is a transport theory code developed to determine reactivity effects and kinetic parameters such as effective delayed neutron fractions and mean generation time by applying the usual perturbation formalism for two-dimensional geometry. A portion of the documentation is in German. Reference: KfK 2787. FORTRAN IV; IBM 3033.

PSR-14/O5S

This response function generator, an O5R Monte Carlo code for calculating pulse height distributions due to monoenergetic neutrons incident on organic scintillators, was updated to correct

several errors in the labeled common of O5S. These errors lead to aberrations in the response shape predicted by the code. The errors are all in COMMON/LGNDRE/IC, E(85), F(7,85) which contains the coefficients as a function of neutron energy for the carbon elastic scattering angular distributions. Specifically, the errors in this data set consist of a section of card images that are not in increasing energy order in addition to a number of coefficients that received a high positive exponent in E format. These errors are obvious and may be seen by patching a routine into PSCAT, for example, to print out E(I) and F(J,I), I = 1,85, J = 1,7. It is strongly recommended that current users of this code package furnish a 2400-ft reel of tape and a cover letter requesting the corrected version of O5S. FORTRAN IV; IBM 360/75/91; IBM-3033.

CHANGES TO THE DATA LIBRARY COLLECTION

Two existing data libraries were updated during the month.

DLC-31/FEWG1-85

This coupled 37-neutron, 21-gamma-ray group cross section library in ANISN format was updated at Oak Ridge National Laboratory by running PSR-63/AMPX-II on ENDF/B-IV cross sections to replace data sets for H-1, Be-9, and B-10. We are grateful to the user community, particularly the National Defense Research Institute, Stockholm, Sweden, WDB für ABC-Schutz, Münster, Fed. Rep. Germany, Science Applications International Corp., Schaumburg, Illinois, and Ballistic Research Laboratory, Aberdeen, Maryland, for

providing this feedback. The H-1 epithermal photon production data were too high by up to 30%. The Be-9 cross section above 3MeV was too low by up to 0.5 barns due to omission of the (n,2n) reaction. The B-10 thermal neutron photon production cross section was too high by an order of magnitude. This current version is designated DLC-31H/FEWG1-85. IBM 3033; EBCDIC card images.

DLC-105/MCNPDAT

The informal report documenting MCNPDAT was altered by adding information on how to add the photon library MCPLIB to MCNPDAT.

ANS to Support Radiation Coordination

In a letter to the American Nuclear Society (ANS) Radiation Protection and Shielding Division, W. C. Hopkins called attention to the White House-sponsored Committee on Interagency

Radiation Research and Policy Coordination (CIRRPC). Dr. Alvin Young, chairman of the CIRRPC, made a presentation explaining

CIRRPC's purpose to the ANS Executive Conference in San Diego in December.

Young noted that there has not been effective radiation coordination within the federal government since the demise of the Federal Radiation Council in 1970. The Committee's purpose is to advise on formulation of policy, coordinate policy between agencies, and act as coordinator, clearinghouse, and evaluator of federal research. Two panels, a Policy Panel and a Science Panel, both staffed by government employees, were formed by the CIRRPC to carry out its functions. The Policy Panel consists of members of CIRRPC who represent the various government agencies. The Science Panel is chaired by Dr. Randell S. Caswell of the National Bureau of Standards; its Executive Secretary is Dr. Lawrence B. Hobson of the Veterans Administration.

In addition to the panels, CIRRPC has established a Science Panel Talent Pool consisting of U.S. radiation experts from universities, national laboratories, government laboratories, and the private sector. Hopkins noted in his letter that Dr.

Young asked the ANS to help provide members for the talent pool.

In its first year CIRRPC has identified ten federal scientific radiation issues:

1. Radioepidemiological Tables (Underway)
2. *De Minimis* Radiation Levels
3. Radon Daughter Health Effects
4. Occupational Exposure Registry
5. Measurement, Recording, and Control of Radiation
6. Food Irradiation
7. Scientific and Technical Input to Standards and Regulations
8. Use of Radiation in Science, Industry, and Medicine
9. Non-Ionizing Radiation
10. Coordinating Federal Policy on Radiation Standards

A draft document, "Federal Radiation Issues and Their National Priorities," is now in the review process; the final version is expected to be released in the spring.

Additional information is available from CIRRPC, Suite 508, 1346 Connecticut Ave., N.W., Washington, DC 20036.

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.

Goldstein Delivers Con-Ed Lecture

Herbert Goldstein, Thomas Alva Edison Professor of Nuclear Science and Engineering at Columbia University in New York City, has again been selected by the president of Columbia University and Consolidated Edison Company to deliver the Con Edison Lecture on Monday, March 4, 1985, at 7:30 PM, in the Kellogg Conference Center, School of International and Public Affairs. His lecture title is "Nuclear Waste Disposal in Prehistoric Times."

Prof. Goldstein was instrumental in the establishment of an information analysis center for shielding (RSIC), has served as an advisor, and continues to support RSIC activities. We are pleased to call attention to the recognition of his achievements.

Harley Named 9th Taylor Lecturer

The 1985 Taylor Lecture will be delivered by **John H. Harley**, radiochemist and environmentalist. Dr. Harley is an advisor to the U.S. Delegation to the United Nations Scientific Committee on the Effects of Atomic Radiation. Prior to his retirement he was Director of the Department of Energy (DOE) Environmental Measurements Laboratory.

The lecture, "Truth (and Beauty) in Radiation Measurements," will be a featured presentation of the annual meeting of the National Council on Radiation Protection and Measurements (NCRP). The two-day meeting will be held April 3-4 and will include a major scientific session on radioactive waste, briefings on regulatory issues of radioactive wastes, and status reports of selected NCRP activities.

Paul N. Stevens, a professor in the Nuclear Engineering Department of the University of Tennessee, presented a 2-week series of Monte Carlo lectures at the Instituto de Pesquisas Energeticas E Nucleares, Sao Paulo, Brazil, in December 1984. Attendees represented the Universitaria of Sao Paulo, the Brazilian Atomic Energy Commission, and the Centro Tecnico Aeroespacial.

Robert L. Childs, Computing and Telecommunications Division, and **Wayne A. Rhoades**, Engineering Physics and Mathematics Division, ORNL, won the best paper award of the Radiation Protection and Shielding Division, ANS, for their paper entitled, "The Linear Nodal Method for Shielding Applications." The award was presented at the ANS Winter Meeting in Washington.

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *John Helm*, Columbia University, New York; *Jack Courtney*, Louisiana State University, Baton Rouge; and *Sergio Ribeiro*, Brazilian Nuclear Energy Commission, Rio de Janeiro.

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.

ISRP-3 Calls for Papers

The call for papers has been issued for the *3rd International Symposium on Radiation (ISRP-3)*, planned for September 30–October 4, 1985, in Ferrara, Italy. **April 15, 1985**, is the deadline for the submission of an abstract on the following general topics:

1. Cross sections for interactions between radiation and matter, and other physical parameters characterizing the primary events induced by radiation in matter,
2. Radiation transport,
3. Properties, planning and preparation of radiation sources,
4. Properties and realization of radiation detectors,
5. Radiation physics in fundamental research,
6. Radiation physics in biomedicine and environmental science,
7. Radiation physics in technology and energy research,
8. Radiation physics in teaching at the university level,

Details and instructions for submitting abstracts may be obtained from ISRP-3 OC Chairman, Istituto de Fisica Generale dell'Università, Via Paradiso, 12, I-44100 Ferrara (Italy).

Calendar

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

April 1985

International Meeting on Advances in Nuclear Engineering Computational Methods, April 9–11, 1985, Knoxville, Tennessee, sponsored by ANS, European Nuclear Society (ENS), Atomic Energy Society of Japan. Contact: H. L. Dodds, c/o Univ. of Tennessee, Nuclear Engr. Dept., Knoxville, TN 37996 or R. M. Westfall, ORNL, P.O. Box X, Oak Ridge, TN 37831 (phone 615-574-5267).

Radiation Protection Instrumentation Course, April 15–19, 1985, Boston, Massachusetts. Contact: Office of Continuing Education, Harvard School of Public Health, 677 Huntington Ave., Boston, MA 02115 (phone 617-732-1171).

Fast Reactor Safety, April 21–24, 1985, Knoxville, Tennessee, sponsored by the ANS, ENS. Contact: George Flanagan, Oak Ridge National Laboratory, P.O. Box X, Bldg. 6025, Oak Ridge, TN 37831 (phone 615-574-6155).

Light Water Reactor Fuel Performance, April 21–24, 1985, Orlando, Florida, an ANS Topical Meeting sponsored by the Fuel Cycle & Waste Management Division and Material Science & Technology Division. Contact: Daniel W. Kurtz, H-9, Florida Power Corp., P.O. Box 14042, St. Petersburg, FL 33733 (phone 813-866-4383).

Workshop on Neutron Therapy: Low Dose Rate and Beam Radiation Therapy, April 24–27, 1985, Lexington, Kentucky. Contact: Yosh Maruyama, Dept. of Radiation Medicine, Univ. of Kentucky, Lexington, KY 40536-0084 USA.

General Meeting of the American Physical Society, April 25–27, 1985, Washington. Contact: The American Physical Society, 335 East 45th St., New York, NY 10017.

Tritium Technology in Fission, Fusion and Isotopic Applications, April 30–May 2, 1985, Dayton, Ohio, sponsored by the ANS and the Canadian Nuclear Society. Contact: H. F. Anderson, Process Engr. Eval. & Control, Monsanto Mound Facility, P.O. Box 32, Miamisburg, OH 45342 (phone 513-865-4020).

May 1985
Handling of Radiation Accidents by Emergency Personnel Course, May 7–10, 1985, Oak Ridge, Tenn., sponsored by DOE. Contact: Robert C. Ricks, Director, REAC/TS, ORAU, P.O. Box 117, Oak Ridge, Tenn. 37831-0117 (phone 615-576-3131).

Beijing International Symposium on Hydrogen Systems, May 7–11, 1985, Beijing, China (PRC), sponsored by the International Association for Hydrogen Energy and the China Association for Science and Technology. Contact: Ann G. Raffle, I.A.H.E., P.O. Box 248266, Coral Gables, FL 33124.

International Conference on Nuclear Data for Basic and Applied Science, May 13–17, 1985, Santa Fe, New Mexico. Contact Phillip G. Young, Mail Stop B243, Los Alamos National Laboratory, Los Alamos, NM 87545 USA (phone 505-667-7670).

Control of Occupational Exposures in Nuclear Power Plants Course, May 13–17, 1985, Boston, Massachusetts. Con-

tact: Office of Continuing Education, Harvard School of Public Health, 677 Huntington Ave., Boston, MA 02115 (phone 617-732-1171).

Telecommunications & Networking...Supplying the Missing Link, May 19-22, 1985, Fort Lauderdale, Florida, sponsored by the American Society for Information Science. Contact: Lawrence A. Woods, Technical Program Committee Chairman, 221 Memorial Library, Univ. of Notre Dame, Notre Dame, IN 46556.

5th Pacific Basin Nuclear Conference, May 19-23, 1985, Seoul, South Korea, sponsored by the Korean Atomic Industrial Forum, the Korean Nuclear Society, ANS, and others. Contact: Sun-Chang Kim, Meeting Chairman, Korea Electric Power Corp., CPO Box 6583, Seoul, Korea. In the U.S. contact James Sweeney, General Electric Co., 175 Curtner Ave., MC-87, San Jose, CA 95125 (phone 408-925-1037).

9th Symposium on Microdosimetry, May 20-24, 1985, Toulouse, France, sponsored by the Commission of the European Communities, Atomic Physics Centre, and Paul Sabatier University. Contact: J. Booz, Commission of the European Communities, DG XII/F/1, Rue de la Loi 200, B-1049 Brussels, Belgium.

6th Symposium on X- and Gamma-Ray Sources and Applications, May 21-23, 1985, Ann Arbor, Michigan. Contact: Martin A. Ludington, Dept. of Physics, Albion College, Albion, MI 49224 USA.

30th Annual Meeting of the Health Physics Society, May 26-31, 1985, Chicago. Contact: R. J. Burk, Jr., Health Physics Society, 4720 Montgomery Lane, Suite 506, Bethesda, MD 20014 USA.

June 1985

25th Annual International Conf. of the Canadian Nuclear Association and 6th Annual Conf. of the Canadian Nuclear Society, June 2-5, 1985, Ottawa, Ontario, Canada. Contact: J. A. Weller, General Manager, Canadian Nuclear Association, 111 Elizabeth St., 11th Floor, Toronto, Ontario, Canada M5G 1P7.

Annual Meeting of the American Nuclear Society, June 9-14, 1985, Boston, Massachusetts. Contact: David G. Pettengill, ANS Meeting Manager, American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60535.

6th Annual Meeting of the Canadian Radiation Protection Association, June 11-13, 1985, Saint John, New Brunswick. Contact: John J. Paciga, New Brunswick Electric Power Commission, Health Physics Department, Point Lepreau Generating Station, P.O. Box 10, Lepreau, New Brunswick, Canada E0G 2H0 (phone 506-659-2102 ext. 324).

July 1985

22nd Annual Conference on Nuclear and Space Radiation Effects, July 22-24, 1985, Monterey, California, sponsored by the Institute of Electrical and Electronics Engineers, Inc. and cosponsored by the Defense Nuclear Agency, Sandia National Laboratories, and the Jet Propulsion Laboratory. Contact: Kenneth F. Galloway, B344 Tech, National Bureau of Standards, Washington, DC 20234 USA.

August 1985

Australian Radiation Protection Society Annual Meeting, August 19-21, 1985, Melbourne, Victoria, Australia. Contact: T. H. Gan, Australian Radiation Laboratory, Lower Plenty Road, Yallambie, Victoria 3085, Australia.

SMIRT-8, August 19-23, 1985, Brussels, Belgium. Contact: Sergio Finzi, CEC - Directorate Gen., X11-JRC, Brussels, Belgium.

Medical Planning and Care in Radiation Accidents Course, August 19-23, 1985, Oak Ridge, Tennessee, sponsored by DOE. Contact: Robert C. Ricks, Director, REAC/TS, ORAU, P.O. Box 117, Oak Ridge, Tenn. 37831-0117 (phone 615-576-3131).

International Seminar on Containment of Nuclear Reactors, August 26-27, 1985, Brussels, Belgium. Contact: Rolf Krieg, Inst. für Reaktorentwicklung, Kernforschungszentrum, Karlsruhe GmbH, Postfach 3640, D-7500 Karlsruhe 1, F. R. Germany or Algirdas H. Marchertas, Reactor Analysis and Safety Div., Argonne National Laboratory, Argonne, IL 60439 USA.

September 1985

ANS Topical on Criticality Safety and the Storage of Fissile Material, Sept. 9-12, Jackson, Wyoming. Contact: Robert E. Wilson, Idaho Chem Processing Plant, P.O. Box 4000, (CPP-668), Idaho Falls, ID 83403 (phone 208-526-1361).

Handling of Radiation Accidents by Emergency Personnel Course, Sept. 10-13, 1985, Oak Ridge, Tenn., sponsored by DOE. Contact: Robert C. Ricks, Director, REAC/TS, ORAU, P.O. Box 117, Oak Ridge, Tenn. 37831-0117 (phone 615-576-3131).

Health Physics in Radiation Accidents Course, Sept. 23-27, 1985, sponsored by DOE. Contact: Robert C. Ricks, Director, REAC/TS, ORAU, P.O. Box 117, Oak Ridge, Tenn. 37831-0117 (phone 615-576-3131).

ANS Topical Meeting on High Level Nuclear Waste Disposal — Technology and Engineering, Sept. 24-26, 1985, in Pasco, Washington. Contact: Edward B. Ash, Rockwell Hanford, P.O. Box 800, Richland, WA 99352 (phone 509-376-6846).

October 1985

3rd International Topical Meeting on Reactor Thermal Hydraulics, October 15-18, 1985, Newport, Rhode Island, sponsored by the ANS, American Society of Mechanical Engineers, and the American Institute of Chemical Engineers. Contact: 3rd Internatl. Top. Meeting on Reactor Thermal Hydraulics, c/o H. Shaffer, 1671 Worcester Road, Framingham, MA 01701 USA.

12th Annual Meeting and International Conference on Nuclear Energy, October 20-23, 1985, Boston, Massachusetts, sponsored by the World Nuclear Fuel Market. Contact: Donna P. Cason, Administrative Director, WNF, 5720 Peachtree Parkway, Norcross, GA 30092 (phone 404-447-1144).

Symposium on Organ Dosimetry for External Gamma and Neutron Radiations, October 22-24, 1985, Knoxville, Tenn., sponsored by the Oak Ridge National Laboratory. Contact: R. O. Chester, ORNL, P.O. Box X, Oak Ridge, TN 37831 (phone 615-574-2102, FTS 624-2102).

Nuclear Science Symposium, October 23-25, 1985, San Francisco, California, sponsored by the Inst. for Electrical and Electronics Engineers. Contact: R. S. Larsen, Stanford Linear Accelerator Center, Stanford Univ., P.O. Box 4349, Stanford, CA 94305 (phone 415-854-9300 ext. 2726; FTS 461-9300 ext. 2726).

International Symposium on Source Term Evaluation for Accident Conditions, October 28-November 1, 1985, Columbus, Ohio. Participation must be through designation by the

Government of a Member State of the IAEA or by an organization invited to participate. Contact: Secretariat, c/o International Atomic Energy Agency, Vienna International Centre, P.O. Box 100, A-1400, Vienna, Austria.

November 1985

Joint Meeting of the American Nuclear Society and the Atomic Industrial Forum, November 11-15, 1985, San Francisco.

co. Contact: Meetings Dept., ANS, 555 North Kensington Ave., La Grange Park, IL 60525, or James R. Sasso, General Electric-MC-871, San Jose, CA 95125 (phone 408-925-1195).

11th Symposium on Engineering Problems in Fusion Research, November 18-22, 1985, Austin, Texas. Contact: Ward Harris, Fusion Research Center, Univ. of Texas at Austin, RLM 11.1222, Austin, TX 78712 (phone 512-471-4576 or 4698).

FEBRUARY 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 copy-righted (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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