RSIC Newsletter

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Don't be discouraged by a failure. It can be a positive experience. Failure is, in a sense, the highway to success, inasmuch as every discovery of what is false leads us to seek earnestly after what is true, and every fresh experience points out some form of error which we shall afterwards carefully avoid — John Keats

AN OPEN NOTE TO THE SHIELDING COMMUNITY

It is the current fashion in the nuclear industry to think in terms of trends analyses in making projections into the future for long-term program planning. RSIC is no exception. In these changing times, we are asking of ourselves and others questions similar to these which follow.

1. Where is the nuclear industry going in the next 5–10 years?.
2. What changes in research and development (R&D) can be foreseen which might have an effect on RSIC?
3. Is the information analysis center (IAC) concept still valid for shielding? Does shielding still need an IAC?
4. What changes in computers, or computing trends, may affect RSIC?
5. What political trends do you foresee which may affect the industry and RSIC?
6. Will national organizational changes (e.g., what happens to DOE) affect RSIC?
7. Will increasing trends towards bilateral exchange agreements versus multinational exchange agreements affect RSIC?
8. Will the trend (political) towards requiring full cost recovery of information centers such as the National Energy Software Center (NESC) have an effect on RSIC?

We ask those of you who are philosophically inclined, politically astute, generally forward thinkers, and/or who possess a crystal ball to participate in the exercise with us. Give us your input to the trends analysis. We ask you to go one step further. When you foresee change, suggest, in each case, its possible effect on RSIC's program, subject coverage, and mode of operation. Always ask such questions as:

Has RSIC fulfilled its mission?
Is there a continuing need for the RSIC role?
How should RSIC change to meet changing times?

An early written response will be deeply appreciated.

In 1976, RSIC made a survey of the radiation protection, radiation transport and shielding needs of the nuclear power industry. The results were reported (EPRI-NP-155) and RSIC led in a thrust to encourage support of R&D to fill those needs.

A quick review indicates that a great many of the stated needs have been addressed in the intervening 6–7 years. It was, therefore, a very useful exercise.

The suggestion was made at the time that the survey should have included the entire nuclear R&D community, and not just nuclear power. We believe that the time has now come to do so. The results will provide information which may be useful to the entire nuclear community.

The December issue of the *RSIC Newsletter* will have appended the periodic distribution query. In addition, the form will be designed to assess your thinking on the state of the art of shielding in its

all-inclusive definition, and what you perceive are gaps in R&D which should be filled. It is intended that the survey cover all applications of shielding technology, e.g., fission and fusion reactors, nuclear weapons, radioisotopes, accelerators, and space. It should also cover published results (the literature), methodology, and all computing technology. Your comments and suggestions on the survey coverage will be welcomed.

In summary, give us your thinking **now** on current trends which may have an effect on the shielding community and therefore on RSIC, your suggestions for coping with change, and be prepared to respond to the upcoming RSIC survey of the shielding industry.

Your cooperation is deeply appreciated.

Betty F. Maskewitz

6th ICRS Program Planned

An international technical program committee convened in Karlsruhe, Federal Republic of Germany on September 20–21, 1982, to review summaries of proposed papers and plan the program for the 6th International Conference on Radiation Shielding to be held in Tokyo, Japan, May 16–20, 1983. A total of 150 papers will be given in two concurrent sessions over the 5-day period.

The preliminary program indicates that there will be papers on the following topics: shielding design — fusion (13 papers), fission (10); methods development — deterministic (16), Monte Carlo (12); radiation exposure (10); streaming — fusion (6), fission (12); protection experience (9); cross-section libraries (8); post-accident and decommissioning (7); sensitivity analysis (7); integral experiments — general (13), unfolding (5); skyshine (4); radiation damage (6); and standards (9).

General information concerning the conference and preliminary registration forms are available from RSIC (see masthead for mailing address) or from the organizing committee. Requests for full information should be addressed to:

Dr. T. Asaoka
Reactor Engineering Division
Tokai Research Establishment
Japan Atomic Energy Research Institute
Tokai-mura, Ibaraki-ken
319-11, Japan

New NCRP Report Available

The National Council on Radiation Protection and Measurements (NCRP) has announced the publication of NCRP Report No. 70, *Nuclear Medicine — Factors Influencing the Choice and Use of Radionuclides in Diagnosis and Therapy,* now on sale. The report offers broad guidance to those using radionuclides for medical purposes. It addresses the many factors which influence the choice of the proper radiopharmaceutical drug product for the diagnosis or treatment of a specific disease or condition. It also examines decision-making considerations in the choice of radiopharmaceutical drug products and factors relevant to the choice of instruments utilized in nuclear medicine procedures. Important parts of the report treat radiation dose and the evaluation of radionuclide procedures in their clinical utility. It also includes guidelines for performing nuclear medicine procedures. One appendix sets out the guidelines for clinical evaluation of radiopharmaceutical drugs developed by the Food and Drug Administrations' Radiopharmaceutical Advisory Committee. Estimates of absorbed dose for known radiopharmaceutical drug products are in another appendix.

NCRP Report No. 70 can be purchased for $12.00; orders should be directed to: NCRP Publications, 7910 Woodmont Avenue, Suite 1016, Bethesda, Maryland 20814.

PERSONAL ITEMS

Duaine Lindstrom is now associated with the Joint Center for Graduate Study in Richland, Washington, as program coordinator in nuclear engineering. The organization is an academic, cooperative program among local universities near Hanford, with faculty and students drawn from Hanford contractors.

Thomas M. Jordan, a private consultant in radiation transport methodology for the past several years, is now on the staff of the Jet Propulsion Laboratory in Pasadena, California.

Jack Courtney, Nuclear Science Center of Louisiana State University, visited RSIC for two days during the month to discuss programs of mutual interest.

CHANGES TO THE COMPUTER CODES COLLECTION

Several changes were made to the code collection during the past month. These included changes to existing code packages (two updates, a complete replacement, and an extension to include a new hardware version). Two new contributions are announced, one each from Japan and Yugoslavia.

CCC-190/AKERN

This point kernel integration scheme package was updated by the addition to the source of 2 function routines, recompiling the original version of QAD-P5F on the IBM 3033 system, executing additional sample problems, and appending the output to the IBM version, denoted CCC-190B. The need for change was called to RSIC attention by W. Zobel of TVA. FORTRAN-IV; IBM 3033.

CCC-254/ANISN

The IBM version of this multigroup one-dimensional discrete ordinates transport code system with anisotropic scattering was updated by minor program changes and rerunning the sample problems and saving the corresponding output for distribution with the package. This update was initiated through a troubleshooting call from the U.S. Bureau of Mines where there was an indication that dimension and equivalence statements must be changed in three subroutines for compatibility with newer hardware and software systems. FORTRAN IV; IBM 3033.

CCC-320/DOT IV

The two-dimensional discrete ordinates radiation transport code package (4.2) was extended to include a CRAY hardware version. The new version was contributed by United Information Services, Inc., Overland Park, Kansas, and has been designated (C) version. FORTRAN IV; IBM 360/370(A), CDC(B), CRAY(C).

CCC-428/ONEDANT-82

The one-dimensional, diffusion-accelerated, multigroup neutral particle transport code system has been replaced by newer technology furnished by the original contributor, Los Alamos National Laboratory. The new version corrects a major problem found in the alpha calculation with non-unity density factors. FORTRAN IV; CDC 7600.

PSR-184/MMCR-2

This multigroup Monte Carlo neutron and photon transport code package was contributed by the Institute for Nuclear Study, University of Tokyo, Tokyo, Japan. Treating transport in cylindrical coordinates through one medium, MMCR has source geometry limited to a point isotropic cone or normally-incident broad-beam source within or outside the medium. The flux density at any point within or outside the medium or through the upper or lower boundary surface of the medium is estimated either by the point-detector estimation or boundary-crossing estimation, respectively. The statistical error is estimated for each equally-divided batch from the total number of histories. Reference: User's Manual. FORTRAN IV; FACOM-M 180.

PSR-194/FEDGROUP-C

A neutron multigroup cross-section processing code package was contributed by the Josef Stefan Institute, E. Kardelj University of Ljubljana, Yugoslavia. FEDGROUP-C is based on an early version (2) of the tri-national (Hungary, Poland, and USSR) code series packaged in RSIC as PSR-123/FEDGROUP in 1978 and replaced with FEDGROUP-3 in June 1982. The Yugoslavian contribution, transmitted via the OECD/NEA Data Bank at Gif-sur-Yvette, France, is an improved and modified version of FEDGROUP-2. The package includes test data from KEDAK-3, UKNDL, ENDF/B, and the full WIMS data library. It is designed to also process SOKRATOR, INDL, LENDL, JENDL, and special data files in IAEA-NDS. Reference: JSI User's Manual. FORTRAN-IV; CDC CYBER 174.

CHANGES TO THE DATA LIBRARY COLLECTION

Three existing data libraries have been updated and a new contribution from Switzerland has been added.

DLC-60/MACKLIB-IV-82

This 171-neutron, 36-gamma-ray group kerma factor and reaction rate library has been updated by the original contributor, Argonne National Laboratory, to add gamma-ray kerma factors. The latter were omitted from the update of May 1982.

We are grateful to Convair, General Dynamics, San Diego, California for pointing out the omission. FORTRAN-IV; IBM 3033, CDC 7600.

DLC-96/PEFPYD-82

This fission product decay data library was updated with data based on ENDF/B-V by Los Alamos National Laboratory. Data are provided for thermal, fast, and 14 MeV fission of ^{235}U and ^{239}Pu, thermal fission for ^{233}U and ^{241}Pu, and fast fission for ^{232}Th, ^{238}U, and ^{240}Pu. The ENDF/B-V version is denoted as DLC-96B/PEFPYD-82. The original document provides an adequate description of the ENDF/B-V data as well as earlier data based on ENDF/B-IV since the same format and MAT numbers are used. References: LA-8365-MS and LA-8277-MS. FORTRAN-IV; CDC 7600, LTSS.

DLC-97/DOSDAM81-82

Corrections were made to the 640-group DOSCROS81 part of DLC-97/DOSDAM81-82. The original contributor, Netherlands Energy Research Foundation, Petten (N. H.), The Netherlands, provided an updated library. Corrections were made for $^{93}Nb(n,2n)$, $^{109}Ag(n,\gamma)$, $^{151}Eu(n,\gamma)$, and $^{175}Lu(n,\gamma)$. The code titles for two of the damage cross section data sets were also corrected. FORTRAN-IV; CDC.

DLC-98/E3LWR

Two broad-group coupled multigroup libraries with 45/15 and 15/5 neutron- and gamma-ray groups, were contributed by the Eidg. Institutes für Reactorforschung, Würenlingen, Switzerland. They were derived from DLC-35B/EURLIB-III based on ENDF/B-IV, using the automatic collapsing scheme AGRUKO optimized to a PWR radial shield design benchmark. Cross sections in P_3 expansion (2L + 1 factors not included) are provided for H, C, O, Na, Al, Si, Ca, Cr, Mn, Fe, Ni, Zr, U-235, and U-238. The spectra used for collapsing the broad group structures are also included with the package. No retrieval code is provided. References: EIR-TM-22-82-13 and EIR BERICHT Nr. 443.

UPCOMING MEETINGS, CONFERENCES, COURSES, AND SYMPOSIA

We call your attention to the following events of interest to the radiation shielding community.

ANS Offers Continuing Education Courses

The Radiation Protection and Shielding Division the American Nuclear Society (ANS) is investigating the possibility of offering continuing education courses in conjunction with national meetings. The first of these is planned for June 1984 at the New Orleans, Louisiana meeting. The division is soliciting comments and suggestions which indicate topics of interest and information concerning the amount the individual or his/her organization would be willing to pay for 6 to 7 hours of instruction. Any suggestions in relation to instructors, length of presentation, program accreditation, methods of instruction, local arrangements, or any aspect of this proposed activity would be most welcome. The reader is asked to contact *J. C. Courtney,* Nuclear Science Center, Louisiana State University, Baton Rouge, LA 70803: phone (504) 388-2163.

International Beta Dosimetry Symposium Planned

An International Beta Dosimetry Symposium is to be held in Washington, D.C., on February 15–17, 1983. The sponsors include the U. S. Department of Energy, the U.S. Nuclear Regulatory Commission, the Institute of Nuclear Power Operations, and the Health Physics Society. The Gaithersburg Marriott Hotel has been selected for the conference site.

Six sessions will cover the following topics: Physics and Mathematics of Beta Dosimetry; Standardization and Calibration; Instruments for Field Measurements; Personnel Dosimetry; Regulations, Standards, Guides and Compliance; and Field Practices and Techniques.

Further information may be secured from Thomas F. Gesell, U.S. DOE Radiological and Environmental Sciences Laboratory, 550 2nd Street, Idaho Falls, Idaho 83401 USA: telephone (208) 526-2270, telex 9109775915 US DOE IDAHO.

Calendar

We call your attention to the following meetings and courses.

December 1982

Louisiana State University is offering a five-day short course on basic health physics to begin on

December 13, 1982 at a cost of $425. Contact: J. C. Courtney, Nuclear Science Center, Louisiana State University, Baton Rouge, LA 70803: phone (504) 388-2163.

February 1983

Radiation Research Society Annual Meeting San Antonio, Texas, February 27–March 3, 1983. Contact: Diane Taub, 4720 Montgomery Lane, Suite 506, Bethesda, MD 20014, USA.

March 1983

Advances in Reactor Computations Salt Lake City, Utah, USA, sponsored by the American Nuclear Society. Last date for papers is December 13, 1982. Contact: Vincent Acquino, Argonne National Laboratory, P.O. Box 2528, Idaho Falls, ID 83401, USA.

April 1983

National Council on Radiation Protection and Measurements 19th Annual Meeting, Washington, D.C., USA, April 6–7, 1983. Contact: W. Roger Ney, Executive Director, NCRP, 7910 Woodmont Avenue, Suite 1016, Bethesda, MD 20814, USA.

May 1983

Packaging and Transportation of Radioactive Materials (PATRAM 83) 7th International Symposium in New Orleans, Louisiana, May 15–20, 1983. Contact: Secretariat, PATRAM 83 Symposium, Transportation Technology Center, Department 4780, Sandia National Laboratories, P.O. Box 5800, Albuquerque, NM 87185 USA.

July 1983

7th International Congress Radiation Research, Amsterdam, The Netherlands, sponsored by the International Association for Radiation Research. Last date for abstracts is February 1, 1983. Contact: J. J. Broerse, Secretary General, 7th International Congress of Radiation Research, c/o Radiobiological Institute TNO, P.O. Box 5815, 2280 HV RIJSWIJK, Netherlands.

May 1984

International Radiation Protection Association (6th Congress and exhibition), Berlin (West), Federal Republic of Germany, May 7–12, 1984. Last date for abstracts is November 29, 1982. Contact: R. Neider, Bundesanstalt für Materialprüfung (BAM), Unter den Eichen 87, D-1000 Berlin 45.

OCTOBER 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.

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