

RSIC Newsletter



RADIATION SHIELDING INFORMATION CENTER

OAK RIDGE NATIONAL LABORATORY

OPERATED BY UNION CARBIDE CORPORATION • FOR THE U.S. ATOMIC ENERGY COMMISSION

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*If a little knowledge is dangerous,
where is the man who has so much as to be out of danger?---Thomas H. Huxley*

Conference on the Effective Use of Computers in the Nuclear Industry

Knoxville, Tennessee, April 21-23, 1969

CALL FOR PAPERS

The Mathematics and Computations Division of the American Nuclear Society, The Oak Ridge National Laboratory, and the University of Tennessee are jointly sponsoring a conference on "The Effective Use of Computers in the Nuclear Industry" to be held April 21-23, 1969 at the University Convention Center of the University of Tennessee in Knoxville, Tennessee. Single sessions are planned for the mornings and afternoons of the 3 days augmented by round table discussions on Tuesday evening April 22, 1969. Invited papers will introduce and provide a state-of-the-art review in some sessions but most of the time will be allotted to 20 minute contributed papers. Contributions in space-time kinetics including feedback effects, heat transfer and stress analysis, synthesis and variational methods, three dimensional techniques including shielding applications, and effective use of third generation computers including strategy and programming techniques, graphical display devices, data management, use of bulk storage, and algebraic manipulation are especially encouraged.

Round table discussions are being planned in the areas of data management procedures, standardization of modular systems, computer hardware and software needs of the nuclear industry, and interactive systems (man-machine interaction). Conference attendees are invited to participate in these discussions and to suggest further topics to the Technical Program Chairman. A sign-up board for additional informal round tables will be provided at the meeting. The moderators of the round table discussions will summarize briefly significant results at the end of the Wednesday afternoon session, April 23, 1969.

Mrs. Betty F. Maskewitz, Oak Ridge National Laboratory, Post Office Box X, Oak Ridge, Tennessee 37830 is the General Chairman for the Conference; Richard Ehrlich, Knolls Atomic Power Laboratory, Post Office Box 1072, Schenectady, New York 12301 is the Technical Program Chairman. Summaries 400 to 600 words in length, for proposed papers should be reviewed for technical content and pertinence to the theme of the Conference by the Technical Program Committee established by the M & C Division of the American Nuclear Society and should be prepared in accordance with standard ANS abstract requirements. Copies of the final paper will be required by March 15, 1969 for incorporation in a bound proceedings to be available from DTIE shortly after the conference.

RSIC IN NEW LOCATION

The RSIC staff is now getting settled in the new Neutron Physics Division building on "Swan Lake". The entire staff is now all located together for the first time which will be a big help to us. The entire RSIC staff will have the same phone number (3-6944), and our address will remain the same except that the building number is changed from 4500 N to 6025.

Not all our readers are acquainted with all the RSIC operations and services so we will take this occasion to review them.

OPERATIONS

The Center:

1. Examines and analyzes shielding information obtained through surveys of pertinent books, journals, and reports.
2. Maintains an information retrieval system which contains abstracted and indexed shielding information selected by its analysts. If an adequate abstract is not available with the document, it is prepared by the Center.
3. Maintains an archival microfiche file containing copies of the analyzed literature.
4. Reviews specific areas of shielding to determine the state of the art.
5. Examines digital computer codes written for shielding calculations.
6. Intercompares results obtained with different selected shielding codes.

SERVICES

The Center:

1. Issues bibliographies of shielding information, both general and specific in scope.

2. Publishes abstracts of documents included in its information retrieval system.
3. Packages, distributes, and provides information on digital computer codes.
4. Issues reports on special topics.
5. Answers technical inquiries on radiation shielding.
6. Issues a monthly newsletter.
7. Sponsors seminar-workshops related to computer codes or other topics.

SHIELDING PROBLEM BENCHMARKS TO BE PUBLISHED

A. E. Profio, of Gulf General Atomic, Chairman of the American Nuclear Society Shielding and Dosimetry Division committee developing "benchmark" shielding problems, announced at the Toronto meeting that four configurations have been selected as the initial benchmarks. Benchmarks are selected configurations which represent interesting shielding problems and for which good data are available. A limited number will be selected so that the shielding community can focus attention on them in the testing of new computer methods and codes. It is anticipated that RSIC will assist the ANS in the compilation and distribution of the benchmark problems in looseleaf form so that updating will be easily accomplished.

The initial four problems are:

1. Fission point neutron source in graphite medium.
2. Cs-137 point gamma-ray source in water medium.
3. Fission and 14 MeV point neutron sources in air medium.
4. Co-60 plane gamma-ray source on air-ground interface.

Both experimental and theoretical data are available for most of these problems.

CODE PACKAGE REQUISITIONS

To facilitate the handling of code package requests and to save time of RSIC staff members, it would be helpful if the requester supplied the following information:

- (1) What is your computer?
- (2) What software is now standard to your computer installation?
- (3) Can you read tapes written on 7-track or on 9-track channels?
- (4) In what density should your tape be written?

At present RSIC copies tapes on IBM and CDC equipment. If the requester is doubtful as to whether or not he can read these tapes, he should specify what type equipment he uses to read the tapes he receives.

ANS INTERNATIONAL MEETING IN WASHINGTON

The American Nuclear Society winter meeting will be a 5-day meeting in Washington, D. C. starting November 10, 1968. The Shielding and Dosimetry Division will sponsor a special session on "Key Problems in Radiation Shielding" for which several foreign speakers have been invited.

DIRECTORY OF INFORMATION CENTERS PUBLISHED

The Committee on Scientific and Technical Information (COSATI) of the Federal Council for Science and Technology has recently published a *Directory of Federally Supported Information Analysis Centers* (April 1968). The directory, which lists 113 centers, is available from CFSTI, Springfield, Virginia 22151 for \$3.

PROTON PENETRATION RESULTS PUBLISHED BY RSIC

The report *Comparisons of Results Obtained with Several Proton Penetration Codes - Part II*, ORNL-RSIC-22 (June 1968) by W. Wayne Scott and R. G. Alsmiller, Jr. has recently been issued and is available from RSIC and CFSTI.

SHIELDING AMALGAMATION AT NASA LEWIS RESEARCH CENTER

A recent reorganization at NASA Lewis Research Center, Cleveland Ohio, has amalgamated shielding research within Nuclear Systems of the Power Division. Under Don Connalley, Consultant, I. M. Karp heads a Shielding Section of two units, directed by Leonard Soffer and Gerald Lahti.

PERSONAL ITEMS

Miss Rhoda Moles, student at Middle Tennessee State College and Mr. Gael Curry, student at the University of Washington, are with RSIC for the summer. Miss Moles is doing secretarial and clerical work and Mr. Curry is an ORAU summer research participant and is associated with projects connected with the computer code collection.

We have learned that Kaye Lathrop is returning to Los Alamos. He has been with Gulf General Atomic.

George H. Anno, formerly with McDonnell-Douglas Corp., is now with ART Research Corp. in Los Angeles.

VISITORS TO RSIC

Visitors to RSIC during the month of June are: Brenda H. Ivey Austin M. Read, Machining and Gaging Information Center, UCCND-Y-12, Ridge, Tennessee; Bob Howerton, Lawrence Radiation Laboratory, Livermore, California; C. M. Kim and H. Frank Reed, Sargent & Lundy Engineers, Chicago, Illinois; H. C. Woodsum and Dr. Vencil S. O'Block, Westinghouse Astronuclear Laboratory, Pittsburgh, Pa.; H. Rief, Euratom, Ispra (VA), Italy; Archie Wilcox, Aerojet-General Co., Sacramento, California.

JULY ACCESSION LIST OF LITERATURE

The RSIC is now aware of the literature cited in the following list. This literature has either been obtained by RSIC or has been placed on order. When received, this material will be examined and assigned to various files if suitable for our information system. The accession list is divided into three fields of (1) reactor and weapons shielding, (2) space and accelerator shielding, and (3) shielding computer codes. These titles are announced before processing and indexing so that there will be no delay and can serve as a prompt announcement of current literature.

RSIC is not a documentation center. Copies of the literature cited must generally be obtained from the author or from a documentation center such as the Clearinghouse for Federal Scientific and Technical Information Springfield, Virginia 22151.

RSIC maintains a microfiche file of literature entered into its information system. Computer searches of this system (which produces a special bibliography) and duplicate microfiche copies of literature in our file are available upon request. Naturally we cannot supply copies of literature which is copyrighted (such as books or journal articles) or whose distribution is restricted. Neither service is yet available for the codes literature.

REACTOR AND WEAPONS SHIELDING

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Flux Equivalences Among Rayleigh, Isotropic and Other Scattering
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The Effects of Ground Roughness on Fallout Protection Factors
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Monte Carlo Programming for Small Computers
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