# RSIC Newsletter

RADIATION SHIELDING INFORMATION CENTER

OAK RIDGE NATIONAL LABORATORY

OPERATED BY UNION CARBIDE CORPORATION FOR THE DEPARTMENT OF ENERGY

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*The journey of a thousand miles starts with a single step. – Chinese Proverb*

## HELP SOUGHT TO CLARIFY RESEARCH AREAS OF RSIC USERS

RSIC interactions with its user community is made possible through sponsorship from four funding agencies. These include the Department of Energy (DOE), Division of Reactor Research and Technology and Office of Fusion Energy, the Nuclear Regulatory Commission, and the Defense Nuclear Agency. Each sponsor shares in the cost of RSIC operations and attempts, although it is not always possible, to provide enough funding to carry a fair share of the total operating costs.

We have found that RSIC is a technology resource which has benefited users doing research in areas supported by all our funders. In recent years, since the acquisition and operation of our Data General Eclipse minicomputer, we have developed means of getting an approximate handle on the composition of the research areas being investigated by our user community. This information can be recorded as we process requests and later analyzed using an internally developed data base management and statistical analysis program, ADES. To get a more accurate picture, we assign a research profile for each RSIC user. For example, if the requester tells us that, in general, he spends 30% of his time on breeder reactor work, 40% on fusion, and 30% on light water reactors, we count a request from him using those percentages. If a request is accompanied by a specific statement saying that it will be used, for example, in a breeder project, it will be counted as 100% breeder.

To help us get a better handle on our research profile, each RSIC user is asked to provide us with a research profile. To guide your thinking, we have appended to this issue of the *RSIC Newsletter* a form for your use and will also include this form in shipping requested material o you. Please fill out and return it promptly. In addition, if a particular request can be isolated as to its application, the user should so state in the letter of request or in the conversation with an RSIC staff member.

Please help us to help you.

## NEWS OF RSIC PRODUCTS REVIEW

The internal audit of RSIC products continues with current emphasis on the Peripheral-to-Shielding Routines (PSR). A critical review of the code packages PSR 51—62 resulted in the removal of three from the collection as follows:

| | |
|---|---|
| PSR-51/SMUG | The SMUG module in PSR-63/AMPX II is recommended as being current state-of-the-art. |
| PSR-52/MACK | The latest technology is packaged as PSR-132/MACK-IV and is recommended. |
| PSR-61/LAPHAN | ENDF/B-III vintage. LAPHANGAS module of PSR-63/AMPX-II is recommended. |

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.

## CHANGE IN THE COMPUTER CODE COLLECTION

The following addition was made in March.

**PSR-151/CHENDF**

The collection of handling codes for ENDF/B-V data has been augmented by the addition of RESEND5 which was contributed by Oak Ridge National Laboratory. The current code package contains RIGEL5, STNDRD, CRECT, CHECK5, FIZCN, and INTEND. The codes were originally developed at Brookhaven National Laboratory and were made operational and, in some cases, improved and upgraded at ORNL. References: User Input Instructions, informal notes. Earlier versions are documented in ENDF-110, *Description of the ENDF/B Processing Codes and Retrieval Subroutines*. IBM-370/3033.

## CHANGE IN THE DATA LIBRARY COLLECTION

The following change was made in March.

**DLC-64/UKCTRI-81**

The 46 neutron cross-section library for fusion reactor calculations has been updated by the original contributor, the University of Birmingham in England, with the addition of kerma factors and activation cross sections. A slightly modified version of the retrieval code GETEX, which can convert the data to ANISN format, is also supplied. In addition to the kerma and activation data, the library includes cross sections for H, H-gas, D, D-gas, T, Li-6, Li-7, Be-9, B-10, B-11, C, O, F, Na, Ai, K, Ti, V, Cr, Fe, Ni, Cu-63, Cu-65, Zr, Nb, Mo, and Pb. Reference: University of Birmingham, Department of Physics, Paper No. 79-02, *The UKCTRI Data Library: 46-Group Neutron Cross Sections for Fusion Reactor Calculations*, T. D. Benyon and N. P. Taylor, and University of Birmingham, Department of Physics, Paper No. 80-01, *46-Group Neutron Heating Factors for the UKCTRI Data Library*, N. P. Taylor. IBM-370/3033.

## NUCLEAR STANDARDS NEWS

The ANS Standards Steering Committee met on February 26, 1981. New project charters approved were:

| Project | | Chairman |
|---|---|---|
| ANS-6.4.2 | Specification for Radiation Shielding Materials | E. A. Normand (Northwest Energy Service Co.) |
| ANS-6.4.3 | Gamma-Ray Attenuation Coefficients and Buildup Factors for Engineering Materials | D. K. Trubey (Oak Ridge National Laboratory) |
| ANS-8.19 | Administrative Practices for Nuclear Criticality Safety | D. R. Smith (Los Alamos National Laboratory) |

In addition, the SSC approved the efforts of NUPPSCO to develop one or more proposed standards on emergency response facilities. Specific charters are to be prepared by a task force.

ANS efforts to gain the participation of other societies to revise N101.6-1972, *Concrete Radiation Shields*, have been unsuccessful. It is felt that ANS-6.4-1977, *Guidelines on Nuclear Analysis and Design of Concrete Radiation Shielding for Nuclear Power Plants*, and ACI-349-76, *Code Requirements for Nuclear Safety Related Structures*, each cover a substantial part of the material in N101.6 in a more current fashion and are utilized in present engineering practice. ANS has advised the Nuclear Standards Management Board that it will no longer sponsor the standard and that it should be withdrawn.

## WORKING GROUP ON BENCHMARK PROBLEMS REQUESTS SOLUTIONS TO RADWASTE FACILITY PROBLEM

The American Nuclear Society Working Group on Shielding Benchmarks, ANS-6.2.1, requests solutions to a gamma-ray nuclear radwaste facility problem. They would like to have solutions by all applicable computing methods from semi-analytical to Monte Carlo. The specifications are available from RSIC upon request.

## PURCHASE OF DOE MICROFICHE

A private vendor has been contracted to handle distribution of Department of Energy reports in microfiche. The announcement was made by James G. Smith, Director, Microphotography and Distribution Division, DOE/TIC, in a 12/18/80 letter sent to all current or prospective purchasers of DOE microfiche. The letter stated that DOE has awarded a contract to Engineered Systems, Inc., to manufacture and sell copies of DOE research and development reports until December 31, 1985. Microfiche will be manufactured from diazo film and will have a reduction ratio of 24 times.

Information categories and estimated prices for the subscription year were described in the order form enclosed with the letter. Unit prices for microfiche will be $0.079 when all categories are purchased; $0.152 per fiche if selectively purchased by category; and $0.50 per fiche if individually ordered. Engineered Systems, Inc., will also sell hard copy enlarged from the master negative for $0.15 per page of original text. Blank pages in certain instances will be included and charged for at the stipulated rate, because the enlargement process requires that methods involved in the original filming be followed. Postage and sales tax (if applicable) will be a separate cost. For organizations subscribing to all categories, first class postage and handling will be about $800.00 for the period January 1, 1981, through December 31, 1981. If the purchaser is a university or public library, postage and handling will be about $60.00 for the same period. All financial arrangements must be made with Engineered Systems, Inc. Payment is due within 30 days from date of invoice.

Those wishing to purchase DOE microfiche, or needing details about information categories and estimated prices can contact: Engineered Systems, Inc., P. O. Box 866, Oak Ridge, TN 37830.

## EIA DATA INDEX: AN ABSTRACT JOURNAL

Users of the Federal Energy Data Index, or FEDEX data base on RECON, now have access to abstracting and indexing at the table-and-graph level through a new Energy Information Administration (EIA) publication: *EIA Data Index: An Abstract Journal*, DOE/EIA-0233(80). The first issue was published December 1980.

Over 1800 unique tables and graphs are printed in EIA periodicals each year. The *EIA Data Index* contains abstracting and indexing for tables, graphs, and other formatted data reported in EIA publications. It includes a complete subject index and a report number listing for all EIA publications as well as complete information on how to order these publications.

The *EIA Data Index: An Abstract Journal* is a companion volume to the *EIA Publications Directory: A User's Guide*, which provides abstracts and indexes to all EIA publications at the document level. Both publications are generated from the FEDEX data base, which has been developed by the EIA in cooperation with TIC. The *EIA Data Index* will be updated semi-annually. The *EIA Publications Directory* is issued quarterly and cumulated annually. Both are available from the U. S. Government Printing Office.

For information on availability of these and other EIA publications, contact: U. S. Department of Energy, Energy Information Administration, National Energy Information Center, EI-72, Forrestal Building, Washington, DC 20585 (202/252-8800 or FTS 252-8800).

## UPCOMING CONFERENCES

### Radiation Protection Symposium in Scotland

The Call for Papers has been issued by the Society for Radiological Protection for its Third International Symposium on "Radiation Protection – Advances in Theory and Practice" to be held in Inverness, Scotland on June 6–11, 1982. The scientific program will cover a broad spectrum of radiological protection topics embracing both theoretical and practical aspects. Authors wishing to present papers are invited to submit abstracts for consideration. The deadline for these abstracts is July 15, 1981.

Suggested topics for the conference are: radiation and risks, radiobiology and epidemiology, instrumentation and equipment, design of facilities, radioactivity in the environment, education and public education, legal and regulatory aspects, accident management, non-ionizing radiation, and medical techniques. The proceedings will be published.

Further information concerning the conference may be addressed to **G. C. Roberts**, Secretary, Third SRP International Symposium, National Radiological Protection Board, Harwell, Didcot, Oxfordshire OX11 ORQ, England.

### 1982 Ionizing Radiation Symposium Planned

The Call for Papers and Scientific Exhibits has been issued for the "International Symposium on Applications and Technology of Ionizing Radiations" to be held March 12–17, 1982, at the University of Riyadh, Riyadh, Saudi Arabia. Of particular interest are papers which *survey* an area of technology or aspect of the following topics (as compared to papers concerned with very detailed points): Medical Applications, Radiation Protection, High Level Gamma Irradiation, Radiation Chemistry, Radioisotope Production, Industrial and Agricultural Applications, and Dosimetry.

Copy-ready abstracts must be submitted by September 15, 1981. Address all correspondence to: **Raymond C. Barrall**, Cancer Therapy Institute, King Faisal Hospital, Box 3354, Riyadh, Saudi Arabia. All correspondence *must* be sent by *overseas* air mail.

### 1982 Reactor Dosimetry Symposium

A Call for Papers has been issued for the "4th ASTM-EURATOM Symposium on Reactor Dosimetry" to be held at the National Bureau of Standards, Washington, DC, March 22–26, 1982. The Symposium is sponsored by Petten Establishment of the Joint Research Centre of the Commission of the European Communities, ASTM Committee E10 on Nuclear Technology and Applications, U. S. Nuclear Regulatory Commission (NRC), the Electric Power Research Institute (EPRI), all in cooperation with the International Atomic Energy Agency (IAEA).

The theme of the symposium encompasses techniques, data bases, and standardization. The focus will be on the application and requirements for radiation metrology of irradiated fuels and materials in fission and fusion technology. Papers are solicited for the following topics (involving light water reactors, fast breeder reactors, and fusion systems) as well as related subjects: Characterization of Environments, Irradiation Monitoring of Experiments, Adjustment Codes and Uncertainties, Benchmark Fields and Calibration Procedures, Nuclear Data Needs and Problems, Metrology Techniques (new developments and improvements), Fuel Cycle Dosimetry, Radiation Damage Correlations of Structural Materials and Damage Analysis Techniques, Nuclear Heating and Gamma-Ray Dosimetry, and Neutron and Gamma-Ray Transport Calculations.

The Symposium will be organized into formal presentations, a poster session and workshops. Authors who wish to submit summaries for publication in the proceedings without presentation, or those who wish to present their material in the poster session, should announce this.

Information concerning the Symposium may be secured from: **J. K. Schmotzer**, Babcock & Wilcox, Lynchburg Research Center, P. O. Box 1260, Lynchburg, VA 24505, USA; **H. Rottger**, Joint Research Centre, Petten Establishment, HFR Division, Postbus 2, 1755 ZG Petten (N. H.), The Netherlands; or **F. B. K. Kam**, Oak Ridge National Laboratory, P. O. Box X, Oak Ridge, TN 37830, USA.

The original is due March 19, 1982.

## VISITORS TO EPIC

The following persons came for an orientation visit and/or to use EPIC facilities during the month of March: **James F. Baur**, General Atomic Company, San Diego, California; **D. V. Gopinath**, Reactor Research Centre, India; **Arnost Honig**, BRNO Technical University, Czechoslovakia; **Johnny Rosen**, Nuclear Energy Agency, France; **Y. Kato, Kenji Sumita** and **Kazutaka Kawamura**, Osaka University, Japan; **Frank Sweeney** and **David D. Yue**, Oak Ridge National Laboratory, Oak Ridge, Tennessee; **Uwe Trinks**, Technical University of Munich, W. Germany; **Maurice Wilkenson**, Boeing Aerospace Corp., Seattle, Washington; **John G. Williams**, University of Arkansas and University of London, Fayetteville, Arkansas, and United Kingdom; **Roman Zurba** and **John Blansche**, Atomic Energy of Canada, Mississauga, Canada.

## MARCH 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 22151.

*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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