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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Nothing in life is to be feared. It is only to be understood. . . . *Marie Curie*

5TH ICRS REMINDER

The arrival of the RSIC Newsletter on your desk should precede the opening of the 5th International Conference on Reactor Shielding in Knoxville, Tennessee by a few days. This is the last reminder prior to Conference that we hope to see you there. The basic facts are as follows: date, April 18-23, 1977; place: Hyatt Regency Hotel; registration can be accepted on the scene if you have not pre-registered.

WHO HAS QAD ON CDC?

We have several versions of the kernel integration code system, QAD, packaged in RSIC, yet we lack an operable version for CDC computers. Who has a version of QAD currently operable on either of the CDC series of computers? **Please call or write if you have such a version and are willing to contribute it to the RSIC Computer Codes Collection.**

TO PURGE OR NOT TO PURGE?

Each year, we query the RSIC Newsletter distribution to see if our list is current and to see if we have names on our distribution that for several reasons should not be there. In this way we are able to keep our distribution within manageable limits, and are not compounding the unwanted paper problem.

This year, we made our annual query in a new format. We asked the user community to evaluate our products and services. We have found that many persons who only receive the Newsletter felt that since they were not using other RSIC products or services, they had no need to respond to the query. After two mailings from us went unanswered, we purged the names of these persons from our list. After they were notified of the purge, several people contacted us stating their wish to continue to receive the Newsletter. We regret the inconvenience to each of these persons caused by our annual query. We even more regret that these individuals did not respond to our user evaluation. When they call us, we determine that they still want the Newsletter and then solicit suggestions for improvement. We are getting many valuable suggestions.

Since we keep no secrets from our user community, each reader knows that we are critically staffed and that we are having problems with escalation and we are not receiving any cost of living increases from our sponsors. It costs money and manpower to make a mailing. We therefore deeply appreciate an immediate response from our reader community even though it may be a terse note written across our inquiry that you are no longer interested. The shielding community remains small and somewhat fractionated. We need the cooperation and collaboration of each one of you to keep RSIC viable in your service.

SERVICE TO THE NUCLEAR POWER INDUSTRY

Last month we wrote an article in which we stated that we must assign priorities in giving service in order to first fulfill commitments to our sponsors. We invited a ground swell of opinion from persons representing the nuclear power industry to be directed toward those agencies that might be able to furnish financial sponsorship to alleviate the problem. In order for us to know your thinking, we invite a response directly to us as to your feelings, comments, and suggestions for our continuing to serve your needs in a timely manner.

We believe that the end user of the information which we collect and package are the utilities. It seriously troubles us to write an article such as that published last month. However, we must face facts. We believe that the members of this community of users can help us resolve the matter to the end that all information, nuclear data, and computer technology which we package can be furnished to them in an efficient and timely manner. Failing a reasonable solution to the problem, we must begin a slowdown of service to the community on May 1.

NNCSC NAME CHANGE

The National Neutron Cross Section Center, Brookhaven National Laboratory, has announced that their new name is the National Nuclear Data Center (NNDC). The new name is intended to reflect its expanded responsibilities. Neutron data compilation activities began at BNL in the early 50's. A well-known product was the report BNL-325, "Neutron Cross Sections", which collated information from many sources into one easy-to-use reference. The growth of data due to improved research facilities and computerization required increased manpower to maintain the BNL data library, but the growth of sister centers abroad made cooperation possible. The BNL Center is now responsible for entering information into the data base from the US and Canada only; but through the exchange of data with other centers, each having its own geographical coverage, world-wide data is available from any of the cooperating centers.

Since 1964 the NNCSC coordinated the Cross Section Evaluation Working Group (CSEWG) of representatives from industry, national laboratories, and universities resulting in a national reference nuclear data base called the Evaluated Nuclear Data File (ENDF). In 1976 NNCSC was asked to organize and coordinate the Nuclear Data Network to be made up of other ERDA centers active in evaluating nuclear structure data, and to establish cooperative agreements with similar groups abroad. Thus, in addition to its traditional role for neutron data, the BNL Center has been asked to coordinate the evaluation of nuclear structure and radio-active decay data, publish a bibliography of charged particle data, begin the evaluation of charged particle data, and develop master files and retrieval capability for providing services on request to the basic and applied research community. Hence, the new name.

IAEA ANNOUNCES SYMPOSIUM

The International Atomic Energy Agency (IAEA) will hold an International Symposium on Monitoring of Radioactive Airborne and Liquid Discharges from Nuclear Facilities in Portoroz, Yugoslavia, from 5 - 9 September 1977.

The purpose of the symposium is to discuss the various objectives of release monitoring programs, to review critically current practice in the design of appropriate monitoring systems for different types of facilities, and to consider in detail the technical features of the available methods of sampling and measurement. Environmental monitoring will not be considered.

Papers are invited on the following topics:

(a) Objectives of monitoring programs for planned and unplanned releases.
(b) Design of monitoring programs for demonstrating compliance with authorized release limits for nuclear power plants, research and isotope production reactors, other nuclear fuel cycle facilities, and radiochemical laboratories.
(c) Technical features of monitoring methods for airborne and liquid releases, as
    (1) Sampling: location of sampling points; representativeness of samples; and continuous, periodic, batch, composite and other forms of sampling for particulates, halogens, noble gases, tritium, etc.
    (2) Measurement: in-situ methods, including continuous monitoring with associated warning devices; laboratory methods; and sensitivity and accuracy required.
    (3) Quality control, including calibration, testing and inter- comparison of instrumentation and methods.
(d) Recording and reporting of monitoring results for planned and unplanned releases: compatibility of procedures, and additional data to be included in reports.
(e) Examples of national requirements and practices.

Participation in the symposium, whether or not a paper will be presented, must be through designation by the Government of an IAEA Member State or by an international organization invited to participate. For US participants the official authority is: Mr. John H. Kane, Special Assistant for Conferences, Office of Public Affairs, US Energy Research & Development Administration, Washington, D.C. 20545.

Additional information may be secured from the Scientific Secretary, G. E. Swindell, International Atomic Energy Agency, Karntner Ring 11, P. O. Box 590, A-1011 Vienna, Austria; Cable address: INATOM VIENNA; Telex No: 12 645.

EXPEDITING OUR RESPONSE TO YOU

RSIC makes considerable use of remote terminals to our local computers but we do not have equipment in our building for transferring information from tape to tape. To fill requests for materials which to be transmitted on magnetic tape, we must set up and send your tape reel and a job request to either of two separate computer facilities, one of which is 10 miles away. We are able to get reasonably quick turnaround for tapes which we can write 9-track channel, 556 or 800 bits per inch (bpi) density. Those written in 1600 bpi density must be sent to the more distant facility and can take up to 5 days for turnaround. If your local computer facility is versatile enough to read either 800 or 1600 bpi, please ask us to write at 800 bpi so that we may respond more quickly. If you can only read 1600 bpi, please be prepared for the additional time required to fill your request.

LSU HEALTH PHYSICS COURSE

The LSU Nuclear Science Center will offer a five-day course in basic health physics in Baton Rouge beginning on May 9, 1977. The registration fee of $300 includes all the required notes and materials.

The objective of this short course is to present the basic principles of health physics to engineers, scientists, managers, and other technical personnel. An educational background equivalent to a BS degree in science or engineering or a high school diploma and several years' experience in a technical area should be sufficient. The use of advanced mathematics will be minimized since the emphasis will be on solutions to practical problems.

All sessions will be conducted in the Nuclear Science Center on the Louisiana State University campus at Baton Rouge, Louisiana, 8:30 a.m. to 5:00 p.m., Monday through Friday. To provide maximum effectiveness in instruction, the class size is restricted to 17 students. Quotas will be filled on a first-come first-serve basis.

SPECIAL RSIC GRAB BAG - RSIC PUBLICATIONS

An inventory of RSIC publications on hand in hard-cover form, those numbered in the ORNL-RSIC-series, indicates that we have exhausted the supply or replaced certain reports, and have an over-abundance of copies of others. Those marked 'none available' in hard copy may be requested in microfiche form in most cases. For 'best sellers', we have gone to press more than once to fill the demand, as we have done for the ORNL-RSIC-38 volumes on Monte Carlo. In several cases, the technology is outdated. Some of the reports still reflect the state-of-the-art. In some cases, as in space shielding, RSIC no longer has a funded program and the information is dated. In any case, we will be pleased to fill requests as long as the supply lasts.

Several reports are in loose-leaf binders for ease in updating. In some instances, as in ORNL-RSIC-25 Shielding Benchmark Problems, and in ORNL-RSIC-34 DNA Working Cross Section Library, those holding the first issue never asked for the inserts from later publication. A large number of such inserts are on our shelves. Examine your binder for each and, if material is missing, let us know.

Space requirements prohibit our holding the older material indefinitely. Review the list and in cases where you wish to build a reference shelf, please help yourself to the Grab Bag by writing for the material you want. For your information, we cite the report number, title, author, date of publication and number available.

LIST OF REPORTS ISSUED BY RSIC

ORNL-RSIC-1 - (Superseded by ORNL-RSIC-5)

ORNL-RSIC-2 - (Superseded by ORNL-RSIC-5)

ORNL-RSIC-3 - *A Comparison of First - and Last-Flight Expectation Values Used in an 05R Monte Carlo Calculation of Neutron Distributions in Water* - D. K. Trubey and M. B. Emmett (May 1965).
Availability: 25 copies.

ORNL-RSIC-4 - *Some Calculations of the Fast-Neutron Distribution in Ordinary Concrete from Point and Plane Isotropic Fission Sources* - D. K. Trubey and M. B. Emmett (June 1965).
Availability: 25 copies.

ORNL-RSIC-5 Vol. I, II, III and IV - *Bibliography, Subject Index, and Author Index of the Literature Examined by the Radiation Shielding Information Center (Reactor and Weapons Shielding).*
Availability: Vol. I, none (Microfiche only); Vol. II, 103 copies; Vol. III, 46 copies; and Vol. IV, 84 copies.

ORNL-RSIC-6, Vol. I and II - *Abstracts of the Literature Examined by the Radiation Shielding Information Center (Reactor and Weapons Shielding).*
Availability: Vol. I, 2 copies; Vol. II, 72 copies.

ORNL-RSIC-7 - *Tabulated Values of Scattered Gamma-Ray Fluxes in Iron Interpolated from Moments-Method Calculation* - D. K. Trubey (May 1965).
Availability: None (Microfiche only).

ORNL-RSIC-8 - *Survey of Methods for Calculating Gamma-Ray Heating* - H. C. Claiborne (June 1965).
Availability: 27 copies.

ORNL-RSIC-9 - *A Comparison of Three Methods Used to Calculate Gamma- Ray Transport in Iron* - D. K. Trubey, S. K. Penny, and K. D. Lathrop. (October 1965).
Availability: 25 copies.

ORNL-RSIC-10 - *A Survey of Empirical Functions Used to Fit Gamma- Ray Buildup Factors* - D. K. Trubey (February 1966).
Availability: 32 copies.

ORNL-RSIC-11 - *Bibliography, Subject Index, and Author Index of the Literature Examined by the Radiation Shielding Information Center (Space and Accelerator Shielding) (Rev. II, May 1970).*
Availability: Rev. I, None; Rev. II, 26 copies.

ORNL-RSIC-12 - *Abstracts of the Literature Examined by the Radiation Shielding Information Center (Space and Accelerator Shielding).*
Availability: 8 copies.

ORNL-RSIC-13, Vol. I, II, III, and IV - *Abstracts of Digital Computer Codes Assembled by the Radiation Shielding Information Center* - Betty F. Maskewitz, Betty L. McGill, Hemma E. Comolander, Marie Anthony, and Henrietta R. Hendrickson.
Availability: Vol. I and II, None (Microfiche only); Vol. III, 346 copies; Vol. IV, well supplied.

ORNL-RSIC-14 - *The Exponential Transform as an Importance-Sampling Device - A Review* - Francis H. Clark (Jan. 1966).
Availability: 60 copies.

ORNL-RSIC-15 - *Bibliography of the Computer Codes Literature Examined by the Radiation Shielding Information Center* - Betty F. Maskewitz, Vivian A. Jacobs, Jane Gurney (July 1967).
Availability: 12 copies (Old Material; will not be updated).

ORNL-RSIC-16 - *Use of ICRU-Defined Units in Shielding* - D. K. Trubey (October 1968).
Availability: 85 copies.

ORNL-RSIC-17 - *Comparisons of Results Obtained with Several Proton Penetration Codes* - W. Wayne Scott and R. G. Alsmiller, Jr. (July 1967).
Availability: 50 copies.

ORNL-RSIC-18 - *Estimates of Primary and Secondary Particle Doses Behind Aluminum and Polyethylene Slabs Due to Incident Solar-Flare and Van Allen Belt Protons* - W. Wayne Scott (July 1967).
Availability: 50 copies.

ORNL-RSIC-19 - *A Review of the Discrete Ordinates S_n Method of Radiation Transport Calculations* - D. K. Trubey and Betty F. Maskewitz (March 1968).
Availability: 215 copies.

ORNL-RSIC-20 - *Weapons Radiation Shielding Handbook - Chapter 5: Methods for Calculating Effects of Ducts, Access Ways, and Holes in Shields* - Wade E. Selph and H. Clyde Claiborne (Jan. 1968).
Availability: 50 copies.

ORNL-RSIC-21 - *Weapons Radiation Shielding Handbook - Chapter 4: Neutron and Gamma Ray Albedos* - Wade E. Selph (Feb. 1968).
Availability: 140 copies.

ORNL-RSIC-22 - *Comparisons of Results Obtained with Several Proton Penetration Codes - Part II* - W. Wayne Scott and R. G. Alsmiller, Jr. (June 1968).
Availability: 25 copies.

ORNL-RSIC-23 - *A Survey of Recent Soviet Radiation Shielding Work* - J. Lewin, J. Gurney, D. K. Trubey (Sept. 1968).
Availability: 51 copies.

ORNL-RSIC-24 - *Compilation of Data on Experimental Shielding Facilities and Tests of Shields of Operating Reactors* - Compiled by: European American Committee on Reactor Physics, European Nuclear Energy Agency (Nov. 1968).
Availability: 33 copies.

ORNL-RSIC-25 - *Shielding Benchmark Problems* - A. E. Profio, Editor.
Availability: 70 copies; Supp. 2 insert, 350 copies. The Supplement 2 insert provides a calculational problem (polyethylene slab) which can be treated in one or two dimensions, and an experimental problem (deep neutron penetration in sodium) with calculational solutions. It is available in punched form for the original loose-leaf binder.

ORNL-RSIC-26 - *The Attenuation Properties of Concrete for Shielding of Neutrons of Energy Less than 15 MeV* - F. A. R. Schmidt (Aug. 1970).
Availability: 2 copies.

ORNL-RSIC-27 - *A Review of Multigroup Nuclear Cross Section Preparation - Theory, Techniques, and Computer Codes* - compiled by D. K. Trubey and J. Gurney (Jan. 1970).
Availability: None (Microfiche only).

ORNL-RSIC-28 - *Comparisons of the Results Obtained with Several Electron-Penetration Codes* - W. Wayne Scott (March 1970).
Availability: 25 copies.

ORNL-RSIC-29 - *A Review of the Monte Carlo Method for Radiation Transport Calculations* - Compiled by Betty F. Maskewitz and Vivian Z. Jacobs (February 1971).
Availability: None (Microfiche only).

ORNL-RSIC-30 - *Abstracts of the Data Library Packages Assembled by the Radiation Shielding Information Center* - R. W. Roussin (Mar. 1972).
Availability: 388 copies.

ORNL-RSIC-31 - *Abstracts of Peripheral Shielding Code Packages Assembled by the Radiation Shielding Information Center* - Betty F. Maskewitz.
Availability: 118 copies.

ORNL-RSIC-32 *Recent Developments in the Shielding of Neutron Sources* - H. Clyde Claiborne (June 1971).
Availability: 4 copies.

ORNL-RSIC-33 - *A Review of Calculations of Radiation Transport in Air - Theory, Techniques, and Computer Codes* - compiled by D. K. Trubey and H. E. Comolander (May 1972).
Availability: 22 copies.

ORNL-RSIC-34, Vol. I - *Defense Nuclear Agency Working Cross Section Library - Description and Contents* - R. W. Roussin (October 1972).
Availability: 91 copies; updates 93 copies.

ORNL-RSIC-35 - *Shielding of Manned Space Vehicles Against Protons and Alpha Particles* - R. G. Alsmiller, Jr., R. T. Santoro, J. Barish, H. C. Claiborne (Nov. 1972).
Availability: 11 copies.

ORNL-RSIC-36 - *Shielding Against Initial Radiations from Nuclear Weapons* - Lorraine S. Abbott (July 1973).
Availability: 8 copies.

ORNL-RSIC-38, Vol. I, II, III - *Techniques for Efficient Monte Carlo Simulation* - E. J. McGrath, et al. (April 1975).
Availability: None (Microfiche only).

ORNL-RSIC-39 - *The Development of Radiation Shielding Standards in the American Nuclear Society* - D. K. Trubey (November 1975).
Availability: 49 copies.

ORNL-RSIC-40 - *A Review of Radiation Energy Spectra Unfolding* - compiled by D. K. Trubey (July 1976).
Availability: 41 copies.

REPRINT GRAB BAG

Our inventory has disclosed a number of reprints of journal articles which may be of interest to our user community. As usual, we will fill requests as they are received as long as the supply lasts.

Reprints of Journal Articles Available

Nuclear Applications

Vol. 3 (July 1967) "Fission Neutron Attenuation and Gamma-Ray Buildup factors for Lithium Hydride," Francis B. K. Kam and Francis H. S. Clark.
Availability: 22 copies.

Vol. 4 (Jan. 1968) "Energy and Dose Buildup Factors for Various Concretes," F. H. Clark and D. K. Trubey.
Availability: 9 copies.

Vol. 6 (June 1969) "Gamma-Ray Buildup Factors for Sand, Air, and Wood (Cellulose)," Francis H. Clark.
Availability: 6 copies.

Nuclear Applications & Technology

Vol. 8 (May 1970) "Dose Rates in a Slab Phantom from Monoenergetic Gamma Rays," H. C. Claiborne and D. K. Trubey.
Availability: 15 copies.

Vol. 9 (Sept. 1970) "Gamma-Ray Buildup Factor Coefficients for Concrete and Other Materials," D. K. Trubey (Errata - *Nuc. Tech.*, Vol. 10 (Feb. 1971).
Availability: 3 copies.

Nuclear Engineering and Design

(1969), "Analytical Radiation Shielding Calculations for Concrete - Formulas and Parameters," F. A. R. Schmidt.
Availability: 5 copies.

(1970), "Kernel Methods for Radiation Shielding Calculations," D. K. Trubey.
Availability: 23 copies.

(1971), "Heat Generation by Neutrons in Some Moderating and Shielding Materials," H. C. Claiborne, M. Solomito, J. J. Ritts.
Availability: 31 copies.

(1971), "Shielding for Advanced Reactors in the United States," F. C. Maienschein, C. E. Clifford, F. R. Mynatt, and L. S. Abbott.
Availability: 7 copies.

(1971), "Adjoint S_n Calculations of Coupled Neutron and Gamma-Ray Transport Through Concrete Slabs," R. W. Roussin and F. A. R. Schmidt.
Availability: 6 copies.

Nuclear Science and Engineering

(1967), "Variance of Certain Flux Estimators Used in Monte Carlo Calculations," Francis H. Clark.
Availability: 12 copies.

Nuclear Technology

Vol. 13 (February 1972), "Bracketing the Peak Primary Gamma-Ray Dose Rate from Nuclear Devices by Steady-State Transport Calculations," H. C. Claiborne and W. W. Engle, Jr.
Availability: 20 copies.

Reactor Technology

Vol. 15, No. 2 (Summer 1972), "Discrete-Ordinates Methods for the Numerical Solution of the Transport Equation," K. D. Lathrop.
Availability: 51 copies.

Health Physics

Vol. 13 (1967), "Importance of Epithermal Neutrons Relative to Thermal Neutrons in Absorbed Doses," F. H. Clark.
Availability: 12 copies.

VISITORS TO RSIC

The following persons came for an orientation and/or to use RSIC facilities during the month of March:

David W. Vaklyes, Purdue University, West Lafayette, Indiana; D. G. Lindstrom, University of Oklahoma, Norman, Oklahoma; Sheldon G. Levin, AFRRI, Defense Nuclear Agency, Bethesda, Maryland.

CHANGES IN THE COMPUTER CODE COLLECTION

The following changes were made during March.

CCC-255/ANISN-W

The multigroup one-dimensional discrete ordinates transport code with anisotropic scattering, (CDC, version A) was updated to include an auxiliary routine, TAPEMAKER, provided by the Institute of Nuclear Energy Research, Taiwan, Republic of China. ANISN-W is a contribution of Westinghouse Astronuclear Laboratory.

CCC-276/DOT 3.5

The two-dimensional discrete ordinates radiation transport code package (B) was extended to include input and output of a sample problem which was provided by Sandia Laboratories, Albuquerque, New Mexico; and VIP (ORNL code development) converted to run on the CDC computers by the Institute of Nuclear Energy Research, Taiwan, Republic of China.

CCC-289/SKYSHINE

The code package for Monte Carlo integration of 6-MeV gamma-ray transmission, reflection, and air scattered data to compute dose rates outside concrete-steel buildings was updated to correct errors called to our attention by M. B. Wells, Radiation Research Associates, Inc. (RRA), Fort Worth, Texas. A description of errors/corrections, or the entire updated package, may be requested from RSIC.

SKYSHINE was contributed by RRA and Bechtel Corporation, San Francisco, California. The March Newsletter failed to credit Bechtel.

CCC-295/ELGATL

The code package for the calculation of energy spectra from coupled electron-photon slowing down was contributed by the Health and Safety Laboratory, ERDA, New York, New York. Reference: HASL-309. FORTRAN IV; IBM-360.

PSR-64/DOMINO

The general purpose code package for coupling discrete ordinates and Monte Carlo radiation transport calculations was extended to include the UNIVAC-1110 version (C), contributed by the University of Wisconsin, Madison.

PSR-75/AXMIX

The ANISN cross section handling code package was extended to include a CYBER-73 version (B), converted from the ORNL IBM version (A) by the Institute of Nuclear Energy Research of Taiwan, Republic of China.

PSR-92/FORIST

The neutron spectrum unfolding code package (iterative smoothing technique) was replaced by a new version which reflects continuing development since 1975 by the contributors at the University of Illinois. An explanation of the differences between the new version and the original and/or the complete code package is now available.

PSR-101/HYPERMET

The gamma-ray spectra analyzer germanium detector code package was extended to include the IBM compatible ASC Version A.1 furnished by the original contributors, Radiation Detection Group, Radiation Technology Division, Naval Research Laboratory, Washington, D.C. Users of IBM or other 32 bit/word computers should request this PSR-101B.

PSR-107/THERMOS-OTA

The multigroup integral transport code system for thermal lattice calculations using collision probability method for slabs and cylinders was contributed by the Nuclear Engineering Laboratory, Technical Research Center of Finland. References: NEL-10 (January 1974) and NEL-7 (September 1973). FORTRAN IV and V; UNIVAC-1108.

THERMOS-OTA is an improved version of the US developed THERMOS program which uses the collision probability method to solve the integral transport equation for the thermal neutron density in slab or cylindrical geometry. Condensed cross section sets can be obtained for various nuclides and mixtures and can be stored in mass storage as pseudo material libraries. The auxiliary routines THEPSL and THECOM are used to manipulate these libraries. Also included is an auxiliary program, ETOTO, which processes basic nuclear data in the ENDF/B format and produces the data required for the generation of the thermal libraries of THERMOS-OTA and FACEL. Since the scattering kernels are not derived from ENDF/B in THERMOS-OTA and FACEL libraries, the thermal scattering laws contained in ENDF/B are not processed by ETOTO. The processing routines of ETOTO are similar to those of program ETOF. In addition to printed results, the output includes punched cards in the format appropriate for the generation of a THERMOS-OTAor a FACEL library.

CHANGES TO DATA LIBRARY COLLECTION

DLC-31/(DPL-1/FEWG1)

Minor changes were made to this 37 neutron, 21 gamma-ray group coupled library (DNA Few Group Cross Section Library) in ANISN format. A control record identifying the end of the tape has been added and a small change was made to the retrieval code ARID so that it will now sense the end of the data tape whether or not the control record is present. No changes were made to data. Users who have had trouble retrieving DLC-31/DPL-1D should request the new data or code. The current version is designated DLC-31/(DPL-1E).

DLC-37/EPR

A major revision to the ANISN-formatted 100 neutron, 21 gamma-ray group cross-section library for EPR neutronics studies has just been completed. Data sets for Th-232 and U-233 were added.

Gamma-ray production and interaction cross sections for Ti, Zr, Cl, Ca, Nb, Pu-239, Au-197, W-182, W-183, W-184, W-186, and Ta-181 were rerun because the data in the previous version of the library (DLC-37C) were generated using a 21 gamma-ray group structure which was different from that used in the original library.

Neutron cross sections for Ti, Nb, Pu-239, Au-197, W-182, W-183, W-184, W-186, Ta-181, Np-237, and Na-23 were also modified to correct inconsistencies arising from resonance region processing.

The new version is designated DLC-37D. A full reel of magnetic tape is required for transmittal of the library.

DLC-46/MEDLIST

Radionuclide Radiation Data from ENSDF was contributed by the ORNL Nuclear Data Project. The MEDLIST data are a listing of atomic and nuclear radiations (half-lives, energies, intensities) for 194 nuclides from ^{3}H to ^{239}Np. They were derived from the computer file used to prepare *Nuclear Data Sheets* (known as the Evaluated Nuclear Structure Data File [ENSDF]) and the format is very similar to that of ENDF/B-V. The nuclei comprise most of those currently of interest in medical practice or research, health physics, industry, nuclear power, environmental impact statements, and as reference standards. A retrieval code for printing the data is provided. A full reel of magnetic tape is required to obtain the MEDLIST data. References: ORNL- 5114 and informal notes. IBM-360/91.

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.

Special bibliographies and selected computer-printed abstracts of the literature in the RSIC system are available upon request. The Selective Dissemination of Information (SDI) Service is available by submitting a list of subject categories defining the recipient's interests.

THIS LITERATURE IS ON ORDER. IT IS NOT IN OUR SYSTEM. PLEASE ORDER FROM NTIS OR OTHER AVAILABLE SOURCE AS INDICATED.

REACTOR AND WEAPONS RADIATION SHIELDING LITERATURE

AEEW-R-904
PRESTO II: A Program for Multi-Group Source-Sink Calculations in Pressure Tube Reactor Lattices.
Allen, F.R.
October 1976
NTIS

ANL-76-113 (Applied Technology)
Three-Dimensional Thermal-Neutron Radiography.
Berger, H.; Reimann, K.J.
October 1976
ERDA, TIC, P.O. Box 62, Oak Ridge, Tenn. 37830

BNL-21833; CONF-760942-4
Needs and Status of CTR Materials Irradiation Facilities, an Introduction to 14-MeV Neutron Sources.
Grand, P.; Goland, A.N.
1976
Dep., NTIS $3.50

BNL-21953; CONF-760935-38
Determination of the Damage-Energy Cross Section of 14-MeV Neutrons from Critical-Property Changes in Irradiated Nb_3Sn.
Snead, C.L., Jr.; Parkin, D.M.; Guinan, M.W.; Van Konynenburg, A.
1976
Dep., NTIS $3.50

BNL-NCS-50593; ENDF-246
Evaluation of Chromium Neutron and Gamma Production Cross Sections for ENDF/IV.
Prince, A.
August 1976
NTIS $6.00

BNWL-1934
Fifth ERDA Workshop on Personnel Neutron Dosimetry, May 6-7, 1975, Washington, D.C.
Vallario, E.J.; Hankins, D.E.
May 1975
NTIS $5.45

CEA-CONF-3131 (In French); CONF-750935-19 (In French)
Damage Flux Analysis. Solid State Detector and Monte-Carlo Calculation.
Genthon, J.P.; Nimal, J.C.; Vergnaud, T.
September 1975
INIS

CEA-CONF-3133 (In French); CONF-750935-16 (In French)
Damage Function for Mechanical Properties of Steels. Application to the EL_3-Osiris Triton Reactors.
Alberman, A.; Cerles, J.M.; Destot, M.; Genthon, J.P.
August 1975
INIS

CEA-CONF-3323; CONF-750935-22
Calorimetric Measurements of the Dose Absorbed to Graphite in the Research Reactors Melusine (8MWth) and Siloe (35MWth), and in the Power Reactor Bugey 1 (1900 MWth).
Petitcolas, H.; Bonnin, J.J.; Chenavas, P.
August 25, 1975
INIS

CONF-761123-2
Compilation and Evaluation of Atomic and Molecular Data Relevant to Controlled Thermonuclear Research Needs: USA Programs.
Barnett, C.F.
1976
Dep., NTIS $3.50

DP-1439
Microcomputer-Based Pneumatic Controller for Neutron Activation Analysis.
Byrd, J.S.; Sand, R.J.
October 1976
E.I. Du Pont de Nemours and Company

EPRI-NP-250
Evaluated Neutron Cross Sections for Zirconium and Hafnium.
Drake, M.K.; Sargis, D.A.; Maung, T.
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