

# RSIC Newsletter



RADIATION SHIELDING INFORMATION CENTER

## OAK RIDGE NATIONAL LABORATORY

OPERATED BY UNION CARBIDE CORPORATION • FOR THE U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

POST OFFICE BOX X •  
OAK RIDGE, TENNESSEE 37830

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*Science belongs to no one country. ... Louis Pasteur*

### SPECTRA UNFOLDING SEMINAR-WORKSHOP PLANS UNFOLD—PART II

Plans for the RSIC Seminar-Workshop on Radiation Energy Spectra Unfolding, April 12-13, 1976, at Oak Ridge National Laboratory are as follows:

The seminar portion of the meeting will consist of 1 1/2 days of contributed papers on theoretical and practical aspects of unfolding neutron and gamma-ray spectra. Subjects also will probably include detector response functions and relevant computer codes. Problems as diverse as incore reactor spectra and gamma-ray measurements by sodium iodide detectors will be discussed.

The final half-day will consist of two workshops. One workshop will treat in detail the code FORIST, a new unfolding code from the University of Illinois. It is a new development in the FERDOR series. The other workshop will be concerned with unfolding threshold foil measurements.

Speakers are asked to supply a title as soon as possible and an abstract by March 1. The full paper, five pages or less, is due at the time of the conference. Instructions for preparing the paper will be forwarded to prospective speakers.

The conference is scheduled during the Knoxville Dogwood Arts Festival, and East Tennessee should be a beautiful area to visit at that time. If there is sufficient interest, a specially-chartered bus will tour many local points of interest on Sunday, April 11. Guest activities are also planned; so plan to bring your spouse.

There will also be dinner at cost on Monday, April 12, at which Mike Roberts of ORNL will assess the fusion reactor outlook. Participants and guests will also have a special visit to the new American Museum of Atomic Energy.

Please return the last page of the Newsletter if you are interested in attending.

### TECHNICAL PROGRAM COMMITTEE FOR FIFTH INTERNATIONAL SHIELDING CONFERENCE IS ANNOUNCED

David Trubey, General Chairman of the Fifth International Conference on Reactor Shielding, to be held in April 1977 in Knoxville, Tennessee, has announced the appointment of the Technical Program Committee. Siegfried Gerstl, Los Alamos Scientific Laboratory, is chairman.

The members are Armen Abagyan (USSR), Alan Avery (UK), Christian Devillers (France), D. V. Gopinath (India), Gerhard Hehn (Germany), Tomonori Hyodo (Japan), Gerald P. Lahti (USA), Fred R. Mynatt (USA), and R. Nicks (EURATOM). The deadline for abstracts is expected to be during the summer of 1976. Further information will be announced after the committee meets in February.

### SDI PROFILE WITH NO NAME

We recently received an SDI interest profile on our green card with no name. Was it yours?

If you are not receiving our Selective Dissemination of Information (abstracts printed by computer according to your interests), you might like to send us a subject-interest profile.

### PHOTON SCATTERING DATA PUBLISHED

In a recent issue of the *Journal of Physical and Chemical Data*, J. H. Hubbell, W. J. Weigle, E. A. Briggs, R. T. Brown, D. T. Cromer, and R. J. Howerton have published tabulations of photon data. The full reference is *Atomic Form Factors, Incoherent Scattering Functions, and Photon Scattering Cross Sections*, *J. Phys. and Chem. Data* 4(3), 471-538 (1975), available from JPCRD Reprint Service, American Chemical Society, 1155 Sixteenth Street, N.W., Washington, D.C. 20036 as Reprint No. 67 for \$5.50.

### CALL FOR PAPERS: 1976 IEEE ANNUAL CONFERENCE ON NUCLEAR AND SPACE RADIATION EFFECTS at San Diego (La Jolla), California

The 1976 IEEE Conference on Nuclear and Space Radiation Effects will be held on the campus of the University of California, San Diego, July 27-30, 1976. The conference will cover theoretical and experimental studies of nuclear and space radiation effects on materials, components, circuits, and electronic systems. The program will consist of about six sessions of contributed papers and a number of invited papers presented by recognized authorities in radiation effects. Papers are invited in the following fields and related areas:

- . Displacement Damage and Ionization Effects in Semiconductor and Optical Devices, Electronic Components, etc.
- . Physical Properties of Irradiated Solids Including Heavy Particle and Ion Implantation Damage Effects
- . Analysis, Prediction, Simulation and Hardening Against Radiation Effects in Circuits and Systems
- . Radiation Effects Quality Assurance
- . Effects of Space Radiation on Components, Deep Space Probes and Systems
- . Dosimetry and Energy Deposition

Summaries are to be submitted to the Technical Program Chairman and *must be received by March 15*. Nineteen seventy-six Technical Program Chairman: Howard H. Sander, (505) 264-1209, Division 2141, Sandia Laboratories, Albuquerque, New Mexico 87115. Acceptance letters will be mailed by May 1, 1976. Registration forms, programs, and additional conference information will be distributed in May. Nineteen seventy-six Conference Chairman: Terry M. Flanagan, (714) 565-7171, IRT Corporation, Box 80817, San Diego, California 92138.

### INDIAN NATIONAL SYMPOSIUM ON RADIATION PHYSICS TO BE HELD JUNE 10-12, 1976

The National Symposium on Radiation Physics sponsored by the Department of Physics, University of Mysore, India, will be held during June 10-12, 1976. Abstracts of proposed papers are due by April 15; the full papers by May 30, 1976. In addition to neutron and gamma-ray physics, topics include low energy accelerators, basic interaction processes, radiation transport, reactor core physics, reactor shielding, charged particle transport, energy deposition, instrumentation and experimental techniques, use of multicurie sources, and planning of irradiation facilities.

Abstracts and papers must be sent to: Dr. B. Sanjeevaiah, Department of Physics, University of Mysore, Manasa Gangotri, Mysore 570 006, India.

### NUCLEAR DATA STANDARD PUBLISHED

The American National Standard prepared by ANS-19.1, N411-1975, *Nuclear Data Sets for Reactor Design Calculations*, is available from American Nuclear Society, 244 E. Ogden Avenue, Hinsdale, IL 60521 for \$12.50.

## SECOND SECU BULLETIN TO BE PUBLISHED

The publication of the second SECU Bulletin on Shielding Programs by the OECD-NEA Computer Program Library, Ispra (Varese), Italy is anticipated for April 1, 1976. Users of the selected computer programs willing to collaborate are requested to provide the CPL with their paper by March 1.

## PERSONAL ITEMS

**Martin Burrell** has retired from NASA at the George C. Marshall Space Flight Center. Marty was active in the space shielding field for a number of years and made many contributions to the technology.

**Walter Kato** has joined the staff of the Department of Applied Science at Brookhaven National Laboratory and is Associate Chairman for Reactor Safety. He was formerly with Argonne National Laboratory.

**Jim Lonergan** has transferred to the La Jolla, California, office of SAI from Rolling Meadows, Illinois.

**Dr. D. G. Lindstrom** has returned to the U. S. from Imperial College in London. He is at the University of Oklahoma, Norman.

**Don Harris**, formerly with Los Alamos, is now with the Department of Nuclear Engineering at Rensselaer Polytechnic Institute, Troy, N. Y.

## VISITORS TO RSIC

The following persons came during the month of December for an orientation visit and/or to use RSIC facilities: Larry Peck and Faye Fletcher, Information Center Complex, Oak Ridge National Laboratory; N. M. Schaeffer, Radiation Research Associates, Ft. Worth, Texas; G. N. Wrights, Westinghouse Advanced Reactor Division, Pittsburgh, Pennsylvania; W. Ross Burrus, Mini-Max Services, Inc., Lenoir City, Tennessee; Group from Technical Publication, Oak Ridge National Laboratory; Joel R. Buchanan, Oak Ridge National Laboratory; and Roxanne Goldsmith, Societe International De Technologie, Paris, France.

## CHANGES IN THE CODE COLLECTION

### CCC-202/PELSHIE

A new and updated version of this general-purpose kernel integration code for point and extended gamma-ray sources has been received from the original contributor, Atomic Energy Board, Pretoria, South Africa. FORTRAN IV, IBM 360

### CCC-257/DELFIK-TEB

This is a multigroup kernel integration code which calculates gamma-ray exposure from an airborne radioactive cloud. Contributed by Ballistic Research Laboratories, Aberdeen Proving Ground, Maryland. Reference: BRL-1664. FORTRAN IV; UNIVAC 1108.

### PSR-75/AXMIX

This package containing a cross section handling code to create data sets for ANISN and DOT III has been extended to include GIP, a code which prepares a group-organized library. The additional code may be requested alone or as part of the entire package. Contributor: ORNL. Reference: informal notes. FORTRAN IV; IBM 360.

### PSR-97/PAPER 1

This is a Monte Carlo code for the calculation of solid angle and self-absorption factors for an inclined, cylindrical source viewed by a cylindrical detector. It was contributed by Department of Physics, Ben Gurion University of the Negev, Beersheva, Israel. Reference: Nuclear Instrumentation & Methods 123, 551-555 (1975) and user's notes. FORTRAN, CDC 6600. PAPER 1 is made up of 76 records and can be transmitted by cards.

## CHANGES IN THE DATA LIBRARY COLLECTION

## DLC-37/EPR

This coupled  $100n-21\gamma$  multigroup cross section library in ANISN format has been updated by the ORNL contributors and RSIC to add new data sets. Refer to the updated package as DLC-37C. The package now contains cross sections for  $^1\text{H}$ ,  $^4\text{He}$ ,  $^6\text{Li}$ ,  $^7\text{Li}$ ,  $^9\text{Be}$ ,  $^{10}\text{B}$ ,  $^{11}\text{B}$ , C, N, O, F, *Na*, *Mg*, Al, *Si*,  $^{31}\text{P}$ ,  $^{32}\text{S}$ , *Cl*, *K*, *Ca*, Ti, V, Cr,  $^{55}\text{Mn}$ , Fe,  $^{59}\text{Co}$ , Ni, *Cu*, *Zr*, *Nb*, *Mo*, *Sn*,  $^{182}\text{W}$ ,  $^{183}\text{W}$ ,  $^{184}\text{W}$ ,  $^{186}\text{W}$ , *W*, Pb,  $^{235}\text{U}$ , and  $^{238}\text{U}$ . Materials which are in italics denote data sets added since the initial release in June 1975. There are two data sets for Nb, one based on ENDF/B-III and the latest addition based on ENDF/B-IV. There are also reaction cross sections for  $^{10}\text{B}(n,T)2\gamma$ ,  $^{10}\text{B}(n,\gamma)$ ,  $^{11}\text{B}(n,T)$ ,  $^6\text{Li}(n,T)$ ,  $^7\text{Li}(n,n'T)$ , and  $^6\text{Li}(n,T)$  "hot" where "hot" refers to thermal neutron spectrum weighting over an 800° K Maxwellian (300° K Maxwellian used for other reactions). Neutron and gamma-ray kerma factors are also included.

The cross section sets were generated with 1/E weighting with a 800° K Maxwellian thermal neutron region. The XLACS, LAPHNGAS, and SMUG modules of AMPX were used in the generation. The package contains 74,406 records and can be obtained on one 9 track/800 bpi tape or four 7 track/556 or 800 bpi tapes. Reference ORNL-TM-5249; ORNL-TM-4872.

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

	1974
REACTOR AND WEAPONS RADIATION SHIELDING LITERATURE	Dep., NTIS
	ANL-75-2, pp.23-52; CONF-740710, pp.23-52; NEA-CRP-L-118, pp.23-52
AECL-4914	General Monte Carlo Code MONK.
Compilation of Realistic Stopping Powers for the $^4\text{He}$ Ions in Selected Materials.	Moore, J.G.
Ward, D.; Forester, J.S.; Andrews, H.R.	1974
July 1975	Dep., NTIS
NTIS	
	ANL-75-2, pp.53-66; CONF-740710, pp.53-66; NEA-CRP-L-118, pp.53-66
AFWL-TR-75-303, Vol.I	Monte Carlo Code Development in Los Alamos.
Gamma, Neutron, and Secondary Gamma	Carter, L.L.; Cashwell, E.D.; Everett, C.J.;
Transport in Infinite Homogeneous Air. Volume I.	Forest, C.A.; Schrandt, R.G.; Taylor, W.M.;
Assumptions, Calculations, and Results.	Thompson, W.L.; Turner, G.D.
Burgio, J.J.	1974
December 1975	Dep., NTIS
Air Force Weapons Laboratory, Air Force Systems Command, Kirtland AFB, NM 87117	
	ANL-75-2, pp.69-74; CONF-740710, pp.69-74; NEA-CRP-L-118, pp.69-74
AFWL-TR-75-303, Vol.II	Discrete Approach to Complex Planar Geometries.
Gamma, Neutron, and Secondary Gamma	Cupini, E.; De Matteis, A.
Transport in Infinite Homogeneous Air. Volume II.	1974
Edited Results.	Dep., NTIS
Burgio, J.J.	
December 1975	
Air Force Weapons Laboratory, Air Force Systems Command, Kirtland AFB, NM 87117	
	ANL-75-2, pp.75-93; CONF-740710, pp.75-93; NEA-CRP-L-118, pp.75-93
ANL-75-2, pp.5-22; CONF-740710, pp.5-22; NEA-CRP-L-118, pp.5-22	Organization of Cross-Section Data in the Monte Carlo Code SPARTAN.
Efficient Data Management Techniques Implemented in the Karlsruhe Monte Carlo Code KAMCCO.	Bending, R.C.
Arnecke, G.; Borgwaldt, H.; Brandl, V.; Lalovic, M.	1974 Dep., NTIS

- ANL-75-2, pp.95-118; CONF-740710, pp.95-118;  
NEA-CRP-L-118, pp.95-118  
Geometry System Used in the General Monte  
Carlo Transport Code SPARTAN.  
Bending, R.C.; Easter, P.G.  
1974  
Dep., NTIS
- ANL-75-2, pp.119-130; CONF-740710, pp.119-130;  
NEA-CRP-L-118, pp.119-130  
Random Number Generation.  
Coveyou, R.R.  
1974  
Dep., NTIS
- ANL-75-2, pp.133-147; CONF-740710, pp.133-147;  
NEA-CRP-L-118, pp.133-147  
Bell Transform.  
Everett, C.J.; Cashwell, E.D.  
1974  
Dep., NTIS
- ANL-75-2, pp.201-240; CONF-740710, pp.201-240;  
NEA-CRP-L-118, pp.201-240  
Monte Carlo Work at Argonne National  
Laboratory.  
Gelbard, E.M.; Prael, R.E.  
1974  
Dep., NTIS
- ANL-75-2, pp.243-260; CONF-740710, pp.243-260;  
NEA-CRP-L-118, pp.243-260  
FOCUS: A Non-Multigroup Adjoint Monte  
Carlo Code with Improved Variance Reduction.  
Hoogenboom, J.E.  
1974  
Dep., NTIS
- ANL-75-2, pp.261-279; CONF-740710, pp.261-279;  
NEA-CRP-L-118, pp.261-279  
Monte Carlo Technique for Local Perturbations  
in Multiplying Systems.  
Bernnat, W.  
1974  
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- ANL-75-2, pp.295-313; CONF-740710, pp.295-313;  
NEA-CRP-L-118, pp.295-313  
Direction-Dependent Exponential Biasing.  
Bending, R.C.  
1974  
Dep., NTIS
- ANL-75-2, pp.315-338; CONF-740710, pp.315-338;  
NEA-CRP-L-118, pp.315-338  
Monte Carlo Methods for Shield Design  
Calculations.  
Grimstone, M.J.  
1974  
Dep., NTIS
- ANL-75-2, pp.339-349; CONF-740710, pp.339-349;  
NEA-CRP-L-118, pp.339-349  
MCT: A Monte Carlo Code for Time-Dependent  
Neutron Thermalization Problems.  
Cupini, E.; Simonini, R.  
1974  
Dep., NTIS
- ANL/NDM-17  
Sample-Size Effects in Fast-Neutron  
Gamma-Ray Production Measurements:  
Solid-Cylinder Samples.  
Smith, D.L.  
September 1975  
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- ANL-Trans-993; IAE-2529 (In Russian)  
Damage to Materials During Irradiation with a  
Particle Current with a Wide Energy Spectrum.  
Gusev, V.M.; Guseva, M.I.; Krasulin, Yu.L.;  
Martinenko, Yu.V.  
1975  
Dep., NTIS \$4.50
- ANL-Trans-1019; CEA-N-1351 (In French)  
Study of the Upper Shielding of the Phenix  
Reactor: Comparison Between the Methods  $S_N$  and  
Monte-Carlo.  
Lanore, J.M.  
July 1975  
Dep., NTIS \$4.50
- BNL-20159  
Proposal for an Accelerator Based Neutron  
Generator.  
Grand, P. (Ed.)  
July 1975  
NTIS
- BNL-20531; CONF-751026-21  
Analysis of Radiation Damage in  
Fusion-Simulation Neutron Spectra.  
Parkin, D.M.; Goland, A.N.  
1975  
Dep., NTIS \$4.50

**BNL-20437; CONF-750629-5**

Multilayer Monochromators for Neutron Scattering.

Saxena, A.M.; Schoenbon, B.P.  
1975

Dep., NTIS \$5.00

**BNL-NCS-50,446**

ENDF/B-IV Dosimetry File.

Magurno, B.A.

April 1975

Brookhaven National Laboratory

**BNWL-1938**

An Analysis of Tritium Releases to the Atmosphere by a CTR.

Renne, D.S.; Sandusky, W.F.; Dana, M.T.

October 1975

NTIS \$5.45

**CONF-750303-80**

Evaluated Decay-Scheme Data for the ILRR Program.

Helmer, R.G.; Greenwood, R.C.

1975

Dep., NTIS \$4.00

**CONF-751041-1**

Available Computer Codes and Data for Radiation Transport Analysis.

Trubey, D.K.; Maskewitz, B.F.; Roussin, R.W.

1975

Dep., NTIS \$4.00

**CONF-751026-6**

Production of Point Defects in a 14.8 MeV Neutron-Irradiated MgO.

Chen, Y.; Abraham, M.M.; Robinson, M.T.;

Mitchell, J.B.; Van Konynenburg, R.A.

September 1975

Dep., NTIS \$4.00

**CONF-751026-8**

15 MeV Neutron Damage in Cu and Nb.

Roberto, J.B.; Narayan, J.; Saltmarsh, M.J.

1975

Dep., NTIS \$4.00

**CONF-751125-41**

Comparison of the Leading Candidate Combinations of Blanket Materials, Thermodynamic Cycles, and Tritium Systems for Full Scale Fusion Power Plants.

Fraas, A.P.

1975

**Dep., NTIS \$4.50****COO-2180-6**

Measurements of Neutron Flux from an Inertial-Electrostatic Confinement Device.

Westenskow, G.A.

August 1975

Dep., NTIS \$5.00

**ERDA-89**

Summary of the Proceedings of the Workshop on Conceptual Design Studies of Experimental Power Reactor-1.

Murphy, M.; Neff, J. (Eds.)

November 1975

NTIS \$5.45

**EPRI-221 (Tech. Report)**

Development of ENDF/B-IV Multigroup Neutron Cross-Section Libraries for the LEOPARD and LASER Codes.

Jenquin, U.P.; Stewart, K.B.; Heeb, C.M.

July 1975

Battelle Pacific Northwest Laboratories, Richland, Washington 99352

**EUR-5182e, pp.763-775; CONF-740630, pp.763-775**

Determination of Neutron Spectra in a Lithium Sphere.

Kappler, F.; Rusch, D.; Werle, H.; Wiese, H.W.

September 1974

European Community Information Service, 2100 M Street, N.W., Suite 707, Washington, D.C. 20037; Office for Official Publications of the European Communities, Boite postale 1003 - Luxembourg

**EUR-5182e, pp.803-818; CONF-740630, pp.803-818**

Stress and Neutronic Analysis of Stainless Steel Structure for a Lithium Cooled Fusion Reactor Blanket.

Carruthers, H.M.; Constantine, G.; Mitchell,

J.T.D.; Stanbridge, J.R.

September 1974

European Community Information Service, 2100 M Street, N.W., Suite 707, Washington, D.C. 20037; Office for Official Publications of the European Communities, Boite postale 1003 - Luxembourg

**EUR-5182e, pp.819-832; CONF-740630, pp.819-832**

Radiation Damage in Structural Materials in a Fusion Reactor Environment.

Stals, L.

September 1974

European Community Information Service, 2100 M Street, N.W., Suite 707, Washington, D.C. 20037;

- Office for Official Publications of the European Communities, Boite postale 1003 - Luxembourg
- EUR-5182e, pp.833-840; CONF-740630, pp.833-840  
Model for Calculating the Damage Rate.  
Kaletta, D.; Ehrlich, K.  
September 1974  
European Community Information Service, 2100 M Street, N.W., Suite 707, Washington, D.C. 20037; Office for Official Publications of the European Communities, Boite postale 1003 - Luxembourg
- EUR-5182e, pp.939-947; CONF-740630, pp.939-947  
Measurement and Systematics of Cross Sections for Common and Low Yield 14 MeV Neutron Induced Nuclear Reactions on Structural Fusion Reactor-Material and Transmuted Species.  
Qaim, S.M.; Stoccklin, G.  
September 1974  
European Community Information Service, 2100 M Street, N.W., Suite 707, Washington, D.C. 20037; Office for Official Publications of the European Communities, Boite postale 1003 - Luxembourg
- EUR-5182e, pp.949-964; CONF-740630, pp.949-964  
Comparison of Different Anisotropic Scattering Techniques in Neutron Transport Codes.  
Brockmann, H.  
September 1974  
European Community Information Service, 2100 M Street, N.W., Suite 707, Washington, D.C. 20037; Office for Official Publications of the European Communities, Boite postale 1003 - Luxembourg
- EUR-5373e  
Angular Gamma Flux in an Iron Slab Shield.  
Penkuhn, H.  
1975  
Dep., NTIS (U.S. Sales Only) \$4.50
- EURFNR-1233; KFK-2074 (In German)  
Monte Carlo Calculation of Quotients in Reactor Physics.  
Brandl, V.  
February 1975  
Kernforschungszentrum, Karlsruhe
- HEDL-SA-981; CONF-750719-4  
Postulated Accident Conditions for Air Cleaning Systems and Radiological Dose Assessments for Containment Options.  
Hilliard, R.K.; Postma, A.K.  
1975  
Dep., NTIS \$5.25
- IEA-368  
Two-Group Milne Problem: A Numerical Study of the Effect of Scattering Anisotropy.  
Ishiguro, Y.; Jorge, E.  
December 1974  
Dep., NTIS (U.S. Sales Only) \$4.25
- IEA-370  
Half-Range Orthogonality Theorem for Thermal Neutron Transport.  
Ishiguro, Y.  
January 1975  
Dep., NTIS (U.S. Sales Only) \$4.00
- JUL-11(Bd.1), pp.47-69 (In German)  
Determination of Radionuclides in the Primary Coolant of Sodium-Cooled Nuclear Reactors.  
Stamm, H.H.  
From Workshop on Modern Analytical Methods; Juelich, F. R. Germany (15 October 1973)  
November 1974  
ZAED
- JUL-1196  
International Intercomparison of Neutron Spectra Evaluating Methods Using Activation Detectors.  
Fischer, A.  
June 1975  
NTIS
- LA-6116-MS  
ENDF/B-IV Fission-Product Files: Summary of Major Nuclide Data.  
England, T.R.; Schenter, R.E.  
September 1975  
NTIS
- LA-6118-MS  
Application of Sensitivity Analysis to a Quantitative Assessment of Neutron Cross-Section Requirements for the TFTR: An Interim Report.  
Gerstl, S.A.W.; Dudziak, D.J.; Muir, D.W.  
November 1975  
NTIS
- LA-6127-MS  
Effects of Neutron Streaming and Geometric Models on Molten Fuel Recriticality Accidents.  
McLaughlin, T.P.  
October 1975  
NTIS \$4.00

## LA-UR-75-1747

Status of Neutron Cross Sections of Transactinium Isotopes in the Resonance and Fast Energy Regions: Underground Nuclear Explosion Measurements.

Moore, M.S.  
1975  
NTIS

## NASA-TN-D-8084

The Role of Multiple Scattering in One-Dimensional Radiative Transfer.

Adamson, D.  
December 1975  
NASA, Langley Research Center

## ORNL-5062

VENTURE: A Code Block for Solving Multigroup Neutronics Problems Applying the Finite-Difference Diffusion-Theory Approximation to Neutron Transport.

Vondy, D.R.; Fowler, T.B.; Cunningham, G.W.  
October 1975  
Dep., NTIS \$10.60

## ORNL-TM-4999

Comparative Study of the More Promising Combinations of Blanket Materials, Power Conversion Systems, and Tritium Recovery and Containment Systems for Fusion Reactors.

Fraas, A.P.  
November 1975  
Dep., NTIS \$5.45

## ORNL-TM-5036

The Calculated Performance of Various Structural Materials in Fusion-Reactor Blankets.

Williams, M.L.; Santoro, R.T.; Gabriel, T.A.  
December 1975  
NTIS \$5.00

## ORNL-TM-5042

Oak Ridge Tokamak Experimental Power Reactor Study Reference Design.

Roberts, M.; Bettis, E.S.  
November 1975  
NTIS \$7.60

## ORNL-TM-5139

The Epicenter of the Nagasaki Weapon: A Reanalysis of Available Data with Recommended Values.

Kerr, G.D.; Solomon, D.L.  
January 1976  
NTIS

## ORNL-TM-5183 (Applied Tech.)

The Absolute Neutron Spectrum Emerging Through the Large Beam Collimator from the TSR-II Reactor at the Tower Shielding Facility.

Maerker, R.E.; Muckenthaler, F.J.  
January 1976

Energy Research and Development Administration, Technical Information Center, P.O. Box 62, Oak Ridge, Tenn. 37830 \$5.00

## ORNL-TM-5203; ENDF-227

SB2. Experiment on Secondary Gamma-Ray Production Cross Sections Arising from Thermal-Neutron Capture in Each of 14 Different Elements Plus a Stainless Steel.

Maerker, R.E.  
January 1976  
NTIS \$5.00

## ORNL-TM-5204; ENDF-228

SB3. Experiment on Secondary Gamma-Ray Production Cross Sections Averaged Over a Fast-Neutron Spectrum for Each of 13 Different Elements Plus a Stainless Steel.

Maerker, R.E.  
January 1976  
NTIS \$5.00

## ORNL-TM-5225

A Determination of the Neutron Energy and Spatial Distributions of the Neutron Beam from the TSR-II in the Large Beam Shield.

Clifford, C.E.; Muckenthaler, F.J.  
January 1976  
NTIS \$5.50

## ORNL-tr-4007

Program DLS.  
Groenefeld  
Translation by E.G. Silver of Italian Articles  
May 11, 1973  
Dep., NTIS \$6.00

## RISO-M-1808

Estimation of Population Doses from a Nuclear Power Plant During Normal Operation.

Nowicki, K.  
July 1975  
Dep., NTIS (U.S. Sales Only) \$6.50



**SAND-75-5218; CONF-750904-2**

Estimating the Relationship Between Two  
Distribution Functions.

Steck, G.P.; Hanson, D.L.  
1975  
Dep., NTIS \$4.00

**SAND-75-5442**

Pulsed Neutron Sources for Fusion Reactor  
Materials Studies.

Toepfer, A.J.; Martin, T.H.; Clauser, M.J.;  
Swain, D.W.; Beckner, E.H.  
1975  
NTIS

**TID-3557-S10**

Controlled Fusion and Plasma Research - A  
Literature Search.

Whitson, M.O. (Comp.)  
October 1975  
NTIS \$13.50

**UCCND-CSD-24**

Numerical Computation of the Matrix  
Exponential with Accuracy Estimate.

Ward, R.C.  
November 1975  
Dep., NTIS \$4.00

**UCID-16849**

DT Fusion Neutron Irradiation of ANL Electron  
Microscopy Samples.

MacLean, S.C.  
July 1, 1975  
NTIS

**UCID-16850**

DT Fusion Neutron Irradiation of LASL YAG,  
Spinel, and Alumina Samples, LLL Supracil, LLL  
Molybdenum and LLL Photon Interrupter.

MacLean, S.C.  
July 1, 1975  
NTIS

**UCID-16900**

DT Fusion Neutron Irradiation of LLL Initial  
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**RADIATION SHIELDING INFORMATION CENTER SEMINAR-WORKSHOP**  
**Radiation Energy Spectra Unfolding**  
**April 12-13, 1976**  
**Oak Ridge National Laboratory**  
**Oak Ridge, Tennessee 37830**

Pre-registration information registration fee: \$20 to cover organizing costs and partial cost of proceedings (to be collected at final registration).

- I am definitely planning to attend.
- I am planning to contribute a paper. I will send a title and abstract by March 1, 1976. I understand later papers may not be accepted. I will bring a manuscript of the full paper to the conference.
- I am interested in joining a Dogwood Tour by bus of the Great Smoky Mountains on April 11. I understand the tour will be organized *only* if there is sufficient interest.
- My spouse is interested in the guest program on April 12-13. (Registration fee \$5, tickets for bus trips at cost). Please send information.

Name:  
Address:

Return to:  
Radiation Shielding Information Center  
Oak Ridge National Laboratory  
P. O. Box X  
Oak Ridge, Tennessee 37830

**TOUR POSSIBILITIES FOR PARTICIPANTS OF SEMINAR-WORKSHOP  
ON RADIATION ENERGY SPECTRA UNFOLDING DURING  
KNOXVILLE DOGWOOD ARTS FESTIVAL**

Tours of a selection of the following points can be arranged for seminar participants on Sunday, April 11, 1976.

Please indicate your interest in points by placing 0, 1, 2, 3, 4, or 5 in each square. Let 0 show minimum (or no) interest. Let 5 show maximum interest. Sunday's tour will be made up of as many of the points as can be arranged during the day. The price of tickets for all-day tour will be about \$12.00. The ticket covers all transportation, all admission fees, and lunch. Lunch will be a picnic in the Smoky Mountains if the weather permits; otherwise lunch will be served in a restaurant in Gatlinburg, Tennessee, a resort city at the foot of the Smoky Mountains.

- Dogwood Trail in Knoxville — (one or more).
- James White Fort, home of Knoxville's founder, 1786.
- Blount Mansion, home of signer of Constitution of the U. S. and Governor of the territory of the U. S. South of the Ohio River.
- Dulin Gallery of Art, early 20th century revival of classical tradition in architecture.
- McClung Museum, University of Tennessee Campus.
- Bleak House, a 15-room, antebellum mansion which served as General Longstreet's headquarters during Battle of Knoxville (1863).
- Pigeon Forge Pottery, see pottery being made and available for purchase.
- Jungle Brook Nature Trail, Gatlinburg.
- Choice of two hikes along trails in the Smokies.
- Trip through the Smokies to Newfound Gap and Clingman's Dome (about 40 miles round trip from Gatlinburg).
- Choice of authentic craft exhibits and shops.
- Shopping in the tourist shops of Gatlinburg.
- Picnic at Cades Cove in the Smokies.
- Do you prefer half-day rather than full day?