RSIC Newsletter

RADIATION SHIELDING INFORMATION CENTER

OAK RIDGE NATIONAL LABORATORY

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

POST OFFICE BOX X •
OAK RIDGE, TENNESSEE 37831

No. 33 August 15, 1967

RSIC STAFF CHANGES

On August 1, Miss Juanita Brown, Mrs. Hemma Francis, Mrs. Henrietta Hendrickson, and Miss Jane Gurney were transferred to the RSIC staff from the Computing Technology Center, Union Carbide Corporation, Nuclear Division, Oak Ridge. For some time they have been providing services for RSIC through contract with the Computing Technology Center. Miss Gurney operates the computer-based information retrieval system and the remaining personnel work with the computer codes collection.

Mrs. Mildred Landay recently joined the staff on a part-time basis to initiate new and more efficient records systems and statistical reporting and to assist in information processing and organizing records into automated systems.

Two students are working with RSIC for the summer. Miss Rhoda Ann Moles of Middle Tennessee State University is doing clerical work. Assisting in codes checkout is Charles Slater of Florida A & M, an Oak Ridge Associated Universities student.

NEW CODE PACKAGES AVAILABLE

Operable, tested with a sample problem, and available for distribution are the following code packages:

CCC-85/MOMGEN and MOMDIS	Moments Method Codes for Reconstructing Scattered Gamma Ray Distributions, contributed by U. S. Naval Radiological Defense Laboratory, San Francisco, California. (USNRDL-TR-67-9)
CCC-86/HANGER	Monte Carlo Neutron Transport Code - Neutron Heating in Liquid Hydrogen, contributed by NASA/Lewis Research Center, Cleveland, Ohio. (UNC-5043)

CCC-87/LGH

Ray Analysis Calculation of Radiation Transport Through a Cylindrical Duct; contributed by Hitachi Central Research Laboratory and the Japan Atomic Energy Research Institute, Japan, through the ENEA Computer Programme Library, Ispra, Italy.

RECENT VISITORS TO RSIC

The following people visited RSIC during the month of July 1967: Norman Francis, Knolls Atomic Power Laboratory, Schenectady, New York; Capt. R. W. Enz, DASA, Washington, D. C.; S. Pearlstein, Brookhaven National Laboratory, Upton, New York; Don Dudziak and Mrs. Leona Stewart, Los Alamos Scientific Laboratory; W. E. Edwards, General Electric, Cincinnati, Ohio; John Russell, General Atomic, San Diego, California; Ted Perkins, Lawrence Radiation Laboratory, Livermore, California; John Hubbell, National Bureau of Standards, Gaithersburg, Maryland; David Cardwell, Reactor Division, ORNL; Theodore Rockwell III, and D. Strawson, MPR Associates, Washington, D. C.; and R. C. Ross, United Nuclear Corporation, Elmsford, New York.

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

ABS-THH-1019

A Method for Measurement of the Growth Factors for Gamma Radiation in the Energy Region from 0.5 to 15 MeV
W. Futtermenger - Feb. 1966

ABS-THH-1024

Analytical Estimation of the Optimal Selection and Arrangement of Shielding Materials in Reactor Shields
H. Schultz, S. Sasse - Sept. 1965

Acta Phys. Pol., 31: 421-3 (Feb. 1967)

Variations in the Distribution of the Spectrum of Gamma Radiation from Cs Traversing Zinc-Aluminum Alloy, Induced by Unusual Compression of the Absorber
J. Bujok

AHSB(S) R124

Fission Cross Section Data Files for 232-Th, 233-U, 234-U, 235-U, 236-U, 238-U, 237-Np, 239-Pu, 241-Pu and 242-Pu in the Energy Range 1 keV to 14 MeV
W. Hart - 1967

Atomki Kozlem, 8: 340-3 (Dec. 1966)

The Variation of the Spectrum of 14-MeV Neutrons Passing through Different Shieldings
I. Angeli and I. Hunyadi

Bull. Inform. Ass. Belge Develop. Pac. Energ. At. 11:No. 63, 9-13 (Aug. 1966) (French)

Lead, Modern Shielding Material
R. Smith

EIR-115

P_n-Theory in r-θ-Geometry
T. Auerbach and J. Mennig
April 1967

EUR-3457.e

Elementary Methods in Fast Neutron Transport Theory
C. Syros - April 1967

Glas-Email-Keramo-Tech., 17: 130-3 (April 1966) (German)

Radiation Protection Dry Windows for Hot Cells
W. Jahn

BOOK

Health Physics. Principles of Radiation Protection
D. J. Rees - 1967
Massachusetts Institute of Technology, Cambridge, Massachusetts

J. Nucl. Energy, 21, 487 (1967)

Gamma Rays Resulting from Interactions of 14.7 MeV Neutrons with Various Elements
F. C. Engesser and W. E. Thompson

JINR-P9-3269 (Russian)

Buildup of Charged Radiation Component in the Shielding
B. S. Sychev

Med. Radiol., 12(3), 24-8 (March 1967) (Russian)

Calculation of the Dose Distribution in Heterogeneous Media
A. I. Lur'e

NDL-TR-69 (AD-654151)

Scattered Radiation (Skyshine) Contribution to a Concrete-Covered Basement Located in a Simulated Fallout Field
M. Schumchyk, M. Schmoke, E. Schulman, and E. Pollock - July 1967

NP-16776 (Suppl. 1)

The Preparation of Simplified Manuals for Shielding Analysis. Suppl. 1: In and Down Scattering and Finite Fields of Contamination
Final Report
A. W. Starbird and J. F. Batter - March 1967

Nucl. Instr. Method., 50, 141-6 (1967)

Neutron Flux Distribution from a 14 MeV Neutron Generator
H. F. Priest, F. C. Burns, G. L. Priest

ORNL-TM-1794

Neutron Fluxes in Concrete Ducts Due to Incident Epicadmium Neutrons: Calculations and Experiments
R. E. Maerker and F. J. Muckenthaler - May 17, 1967

BOOK

Random Number Generators
Birger Jansson - 1966

Sov. J. Atomic Energy 20(6), 541 (June 1966)

Angular Distribution of Fast Neutrons Outside Iron Shielding
I. V. Goryachev, V. A. Dulin, S. M. Ermakov, V. V. Koluzhenkov, A. P. Suvorov, L. A. Trykov

Sov. J. Atomic Energy, 20(6), 587 (June 1966)

New Method of Chemical Dosimetry for Reactor Radiation
M. V. Vladimirova, A. A. Batalov, I. A. Kulikov, and L. G. Shulyatikova

Sov. J. Atomic Energy, 20(6), 600 (June 1966)

Measuring of Neutron Spectra in the Energy Range up to 3 keV by Resonance Indicators
A. V. Zvonarev, Yu. F. Koleganov, F. F. Mikhailus, and M. N. Nikolaev

Strahlentherapie, 131: 311-18 (Oct. 1966) (German)

Description of the Radiation Field by Separating Primary and Scattered Radiation
G. Schoknecht

TID-23659 (LMSC-2049-S001)

250 Watt Radioisotope Thermoelectric Generator Feasibility Study, Vol. III. RTG Handling System Analysis and Design. Final Report
Lockheed Missiles and Space Company

UCID-2933L

Circular Building with Movable Shielding Door: Cost Estimates
O. W. Callahan - March 4, 1964

UJV-1753 (Czech)

Program for Calculation of Neutron Fluxes, Dose Rates, and Neutron Heat Sources in Shielding of Nuclear Reactor
J. Burian - Feb. 1967

USNRDL-TR-67-42

Gamma-Ray Transport Properties of a Cylinder Placed Behind and Axially Perpendicular to a Slab
George E. Plummer and B. W. Shumway

WANL-TME-1466

Second Status Report Shielding Standard Design Method
Westinghouse Electric Corporation - March 1967

WANL-TME-1597

Synthesis of Calculational Methods for the Design and Analysis of Radiation Shields for Nuclear Rockets Systems
Westinghouse Astronuclear Laboratory - March 7, 1967

Space and Accelerator Shielding

Health Phys., 13(4), 327-343 (April 1967)

Radiation Hazards and Radiation Safety Standards in Manned Space Operations
H. J. Schaefer

Health Phys., 13(4), 345--59 (April 1967)

Space Radiation Dosimetry
Richard Madey

J. Assoc. Computing Mach., 14(1), 100-119 (Jan. 1967)

Fourier Analysis of Uniform Random Number Generators
R. R. Coveyou and R. D. MacPherson

N66-30785 (NASA-CR-76283; NAMI-960)

Note on the Dosimetric Interpretation of Rigidity Spectra for Solar Particle Beams
Herman J. Schaefer - April 26, 1966

N66-31897 (NASA-CR-76518; NAMI-970)

Flare Hazards at Solar Minimum: Dosimetric Evaluation of the Class 2 Flare of February 5, 1965
Herman J. Schaefer - January 1966

N67-20341 (NASA-CR-82999, NAMI-987)

Linear Energy Transfer Spectra and Dose Equivalents of Galactic Radiation Exposure in Space
Herman J. Schaefer - Dec. 9, 1966

NP-15697 (Vol. 1)
N66-15586, NASA-CR-69434, ER-7777 (Vol. 1)

Data Compilation and Evaluation of Space Shielding Problems. Volume 1. Range and Stopping Power Data
C. W. Hill, W. B. Ritchie, and K. M. Simpson

NP-15697 (Vol. 2)
N66-15587, NASA-CR-69435, ER-7777 (Vol. 2)

Data Compilation and Evaluation of Space Shielding Problems. Volume II. Dose Calculations in Space Vehicles
C. W. Hill, W. B. Ritchie, K. M. Simpson - August 1965

NP-15697 (Vol. 3)
N67-11966, NASA-CR-76511, ER-7777 (Vol. 3)

Data Compilation and Evaluation of Space Shielding Problems. Volume III. Radiation Hazards in Space
C. W. Hill, W. B. Ritchie, and K. M. Simpson, Jr.

Nucl. Sci. Eng., 27(2), 151-57 (Feb. 1967)

Calculations of the Radiation Hazard Due to Exposure of Supersonic Aircraft to Solar-Flare Protons
M. Leimdorfer, R. G. Alsmiller, Jr., and R. T. Boughner

Nucl. Sci. Eng., 27(2), 158-89 (1967)

High-Energy Nucleon Transport and Space Vehicle Shielding
R. G. Alsmiller, Jr.

Nucl. Sci. Eng., 27(2), 190-218 (Feb. 1967)

Electron Transport Theory, Calculations, and Experiments
C. D. Zerby and F. L. Keller

Nucl. Sci. Eng., 27(2), 338-47 (Feb. 1967)

High-Energy Accelerator Shield-Leakage Neutron Spectra
K. O'Brien, R. Sanna, M. Alberg, J. E. McLaughlin, and S. A. Rothenberg

ORNL-4046

Analytic Representation of Nonelastic Cross Sections and Particle-Emission Spectra from Nucleon-Nucleus Collisions in the Energy Range 25 to 400 MeV
R. G. Alsmiller, Jr., M. Leimdorfer, and J. Barish - April 1967

N66-36987 (ORNL-TR-1151)

The Reaction of Pions with Nucleons in the Range of Accelerator Energies
A. Eskreys

ORNL-TR-1533 (Translated from ABS-THH-1013)

Evaluation of the Shield for a 5 GeV Gamma-Beam with Nuclear Emulsions
G. Beerwald and C. Passow