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. 16 March 17, 1966

E. P. BLIZARD

The shielding world has suffered a great loss in the passing of Dr. Everitt P. Blizard on February 22, 1966. Bliz was truly a giant in the field and the force of his personality and direction will long be remembered. His service in shielding dates back to the days of infancy of the field and his accomplishments are widely recognized.

RECENT VISITORS TO RSIC

The following people visited RSIC during the month of February: George A. Wilkins, U. S. Naval Test Station, China Lake, California, and Miss Celia Murphy, NSIC, Oak Ridge.

DOES YOUR ORNL-RSIC-11 HAVE MISSING PAGES?

After the bibliography of space and accelerator shielding literature (ORNL-RSIC-11) had been issued, it was discovered that one copy had pages 11 - 22 missing. No other copies could be found with missing pages. However, you should check your copy to see if it is complete and please notify us immediately if it is not.

FEBRUARY ACCESSION LIST OF LITERATURE

The following accession list consists of literature which the RSIC obtained through its usual scanning procedures. This literature will be examined for assignment to various files or for possible rejection. The accession list is divided into three fields of (1) reactor and weapons shielding, (2) space and accelerator shielding, and (3) shielding computer codes.

RSIC is not a documentation center. Hard copies of the literature cited below must generally be obtained elsewhere. In most cases, however, we will be able to supply microfiche copies upon request. There may be a delay if a microfiche original is not available and we must produce one. This will be the case with ordered and newly obtained literature only. Naturally, we cannot supply copies of literature which is copyrighted or whose distribution is restricted.

Reactor and Weapons Shielding

AFWL-TR-65-108 (S)

Gumdrop Neutron and Gamma Ray Radiation Backgrounds
R. K. Hunter, Jr. - December 1965

ORNL-3844

Instructions for the Operation of Codes Associated with the Low-Energy Intranuclear Cascade Calculation
H. W. Bertini, H. E. Francis, and M. P. Guthrie - February 10, 1966

AGN-TP-149

ML-1 SHIELD STUDY
H. O. Whittum and J. K. Witthaus - 1965

NAA-SR-MEMO-10881

Analytic Techniques for the Calculation of the ORNL Tower Shield Experiments. Part III. Annex-3
R. S. Hubner - January 5, 1965

DASA-1703 (USNRDL-TR-939)

Dose Rate and Spectral Measurements from Pulsed X-Ray Generators
E. Tochilin and N. Goldstein - December 3, 1965

AFWL-TR-65-164

AFWL-ATAC Joint Shielding Program - Measured and Calculated Data for Radiation Transmitted Through Ducts and Voids in Shields
J. D. Marshall - December 1965

J. Nucl. Sci. Technol., 2(10), 406-409 (1965)

Multiple Scattering Streaming of Gamma-Rays through Cylindrical Ducts
A. Tsuruo

J. Nucl. Sci. Technol., 2(9), 322-330 (1965)

Single Scattering Streaming of Gamma-Rays through Cylindrical Ducts
A. Tsuruo, M. Shindo and M. Kawabata

Nucl. Struc. Eng., 2(3), 335-340 (September 1965)

Transmission of Gamma Rays through Pipe Walls
I. Umeda

Nucl. Struc. Eng., 2(3), 327-334 (September 1965)

Method for Weight Optimization of a Two-Material Shield for Reactor Radiation
S. Sasse

Nucl. Struc. Eng., 2(3), 323-326 (September 1965)

A Method for Prediction of the Neutron Attenuation in Annular Ducts
J. Nilsson and R. Sandlin

Nucl. Struc. Eng., 2(2), 243-247 (August 1965)

Low Activation Shielding Materials for Nuclear Reactor Environmental Test Chambers
W. G. Bingham

BNL 961 (T-401)

The Neutron Cross Section of Sodium Below 40 keV
Thomas E. Stephenson - December 1965

USNRDL-TR-929

Total Neutron Cross Sections of Copper, Iron, and Aluminum Near 14 MeV
J. C. Albergotti and J. M. Ferguson - November 8, 1965

NASA-CR-371

A Congeries of Absorption Cross Sections for Wavelengths Less than 3000Å
J. O. Sullivan and A. C. Holland - January 1966

MIM-1315

Gamma Shielding Requirements for Plutonium-238 and Polonium-210 (Revised)
K. W. Foster - January 21, 1966

Nucl. Struc. Eng., 2(1), 134-141 (July 1965)

Shielding Design for Cobalt-60 Teletherapy Installations
C. B. Braestup

AFRRI-TN-65-2

The Low-Energy Component of the Total Dose for Deep Gamma Penetrations in Air and Water
C. W. Garrett - November 1965

NAA-SR-MEMO-9916

Monte Carlo Evaluation of Fast Neutron Fluxes and Heating in the S8DS Neutron Shield
D. F. Schweiger and C. U. Steichen - August 27, 1965

Nucleonics, 24(1), 33-39 and 68 (January 1966)

Calculating Absorbed Doses from Radiopharmaceuticals
F. M. Smith

DC 60-4-78

Proposed Two-Component Method of Nuclear Shield Analysis
J. Moteff - April 15, 1960

NEM 46.0041

Two-Component Method Evaluation
N. M. Schaeffer - October 13, 1960

WAPD-RM-219

Application of Gamma Ray Build-up Data to Shield Design
F. W. Marasco and P. E. F. Thurlow

Nuclear Energy, 14, 212-13 (May 1960)

Radiation Protection - New Approach to Measurement Needed

Ann. Rev. Nucl. Sci., 5, 73 (1955)

Nuclear Radiation Shielding
E. P. Blizard

J. Res. Nat. Bur. Std., 56, 89 (1956)

Reflection and Transmission of Gamma Radiation by Barriers; Semianalytic Monte Carlo Calculation
M. J. Berger and J. A. Doggett

J. Appl. Phys., 24, 1272 (October 1963)

Attenuation of Gamma Rays - Transmission Values for Finite Slabs of Lead, Iron and the Compton Scatterer
C. H. Peebles

Proc. Roy. Soc. Lond., Ser. A, 204, 323 (1950)

The Scattering of Gamma Rays in Extended Media, II Backscattering of Gamma Rays from a Thick Slab
J. Corner and R. H. A. Liston

Soviet J. Atomic Energy (English Transl.), 7, 1015 (April 1961)

The Albedo of Gamma Rays and Reflection Build-up Factor
B. P. Bulatov and O. I. Leipunskii

Soviet J. Atomic Energy (English Transl.), 4, 283 (February 1958)

Backscattering of Gamma Radiation in Aluminum
V. A. Vasilev and V. A. Shishkina

Soviet J. Atomic Energy, (English Transl.), 3, 804 (1957)

An Investigation of Gamma Ray Backscattering
U. A. Ulmanis and N. A. Dubinska

Soviet J. Atomic Energy (English Transl.), 5, 1354 (October 1958)

Angular and Energy Distribution of Scattered Gammas in Iron and Lead
Yu. A. Kazanskii, Sp. Belov and Y. S. Matusevich

Soviet J. Atomic Energy (English Transl.), 7, 847 (March 1961)

Gamma Ray Albedo of Co-60, Cs-137 and Cr-51 Isotropic Sources for Some Substances
B. P. Bulatov

Int. J. Appl. Radiat. Isotop., 16: 613-15 (Oct. 1965)

Shielding for Radioisotope Bremsstrahlung Sources 90-Sr + 90-Y
H. H. Naumann and K. H. Waechter

French Patent 1,343,522

Radiation Shield for a Neutron Source
UKAEA - October 14, 1963

Z. Angew Physik, 19: 187-93 (1965) Translation requested.

The Theory of Multiple Scattering of γ Radiation in Expanded Scattering Media. Part II.
A. Schaarschmidt

Z. Angew Physik, 19: 180-7 (1965)

The Theory of the Multiple Scattering of γ Radiation in Expanded Scattering Media. Part I.
A. Schaarschmidt

U. S. Patent 3,208,410

Radiation Shelter
Edward J. Hayes and William E. Rumbles - September 28, 1965

U. S. Patent 3,206,896

Roof Structure for Radiation Shelter
Edward J. Hayes - September 21, 1965

Forest Sci., 11: 341-5 (September 1965)

Gamma-Ray Attenuation by Loblolly Pine Wood: An Investigation of Integral Counting
F. W. Woods, W. A. Hough, D. O'Neal and J. Barnett

Fortschr. Gebiete Roentgenstrahlen Nuklearmed., 102: 335-7 (March 1965) Translation requested.

Testing of Materials for Radiation Protection Against X and Gamma Irradiation. Din 6845

J. Math. Anal. Appl., 11: 236-41 (July 1965)

The Existence and Uniqueness of the Solution to a Problem in Invariant Imbedding
T. A. Brown

Nucl. Sci. Eng., 23: 224-33 (November 1965)

Measured and Predicted Thermal- and Fast-Neutron Fluxes in Air-Filled Annular Ducts
J. Nilsson and R. Sandlin

Nikon-Genshiryoku Gakhai Shi, 7(9), 480-485 (September 1965) Translation requested

Measurements of Dose Build-up Factors of Iron Slabs for Line Isotropic Sources
Iwao Umeda

Nikon-Genshiryoku Gakhai Shi, 7(9), 496-499 (September 1965) Translation requested

Some Considerations of Buildup Factors in γ Ray Penetration for Multiple Layers
Mitsuyuki Kitazume

Kerntechnik, 7(11), 506 - 514 (November 1965) Translation requested

Dose Build-up Factors for Lead, Steel and Water
A. Hönig