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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No. 128 *July 1975*

Whenever you look at a piece of work and you think the fellow was crazy, then you want to pay some attention to that. One of you is likely to be, and you had better find out which one it is. It makes an awful lot of difference.

...Charles F. Kettering

THE RSIC GRAB BAG

Through the generosity of ORNL and various other contributors, we are holding several copies of each of the following reports. We will send them to requesters on a first-come basis until the supply is exhausted. Please order by report number as indicated.

ORNL-TM-4223, ENDF 189, *SDT 12. The ORNL Benchmark Experiment for Neutron Transport Through Sodium,* R. E. Maerker (September 1974).

ORNL-TM-3964, *Neutron-Induced Transmutation of High-Level Radioactive Waste,* H. C. Claiborne (December 1972).

ORNL-TM-3334, *The INDEX Data System: An Index of Nuclear Data Libraries Available at ORNL,* J. L. Lucius, J. D. Jenkins, and R. Q. Wright (March 1971).

ORNL-TM-4490, *Calculated Physical and Biological Results when Negatively Charged Pions are Used to Irradiate a Small and a Large "Tumor" Volume in a Tissue Phantom,* R. T. Santoro, R. G. Alsmiller, Jr. (March 1974).

ORNL-4933, *Energy Deposition by 45-GeV Photons in H, Be, Al, Cu, and Ta,* R. G. Alsmiller, Jr., J. Barish (January 1974).

ORNL-4985, *Gamma-Ray Production Due to Neutron Interactions with ^{68}Zn and the Level Structure of ^{68}Zn,* J. K. Dickens (September 1974).

ORNL-TM-4762, *A Radiological Assessment of Radionuclides in Liquid Effluents of Light Water Nuclear Power Stations,* R. S. Booth, S. V. Kaye, P. S. Rohwer (June 1975).

ORNL-TM-3768, *Investigation of the Adequacy of Nitrogen Cross-Section Sets: Comparison of Neutron and Secondary Gamma-Ray Transport Calculations with Integral Experiments,* E. A. Straker (August 1972).

ORNL-TM-4222, ENDF 188, *SDT 11, The ORNL Benchmark Experiment for Neutron Transport through Iron and Stainless Steel, Part I,* R. E. Maerker (September 1974).

ORNL-TM-4751, *A Systems Analysis Model for Calculating Radionuclide Transport Between Receiving Waters and Bottom Sediments,* R. S. Booth (April 1975).

ORNL-TM-4252, *Gamma-Ray Production Due to Neutron Interactions with Calcium for Incident Neutron Energies Between 0.7 and 20 MeV: Tabulated Differential Cross Sections,* J. K. Dickens, T. A. Love, G. L. Morgan (July 1973).

ORNL-TM-4379, *Gamma-Ray Production from Neutron Interactions with Nickel for Incident Neutron Energies between 1.0 and 10 MeV: Tabulated Differential Cross Sections,* J. K. Dickens, T. A. Love, G. L. Morgan (November 1973).

ORNL-TM-3482, *The Testing of ^{238}U Secondary Gamma-Ray Production Data Sets from the POPOP4 Library,* W. E. Ford, III, J. S. Gillen (February 1972).

ORNL-TM-3801, *A Compendium of Radionuclides Found in Liquid Effluents of Nuclear Power Stations,* R. S. Booth (March 1975).

ORNL-TM-4464, *Gamma-Ray Production Due to Neutron Interactions with Zinc for Incident Neutron Energies Between 0.85 and 20 MeV: Tabulated Differential Cross Sections*, J. K. Dickens, T. A. Love, G. L. Morgan (February 1974).

ORNL-TM-3659, *Shielding Against Neutrons in the Energy Range 15 to 75 MeV*, R. W. Roussin, R. G. Alsmiller, Jr., J. Barish (December 1971).

ORNL-TM-4389, *Gamma-Ray Production from Neutron Interactions with Silicon for Incident Neutron Energies Between 1.0 and 20 MeV: Tabulated Differential Cross Sections*, J. K. Dickens, T. A. Love, G. L. Morgan (December 1973).

BRL-CR-69, *S3PHOTRAN, A General Purpose Photon Transport Program in Complex Geometry (A Modified Version of PHOTRAN). Volume 1: Theory and Users Manual*, S. O. Pickard, Systems, Science and Software, La Jolla, California (May 1972).

BRL-R-1577, *Transport of Photons Through Air Using Source-Energy Band Structure from 300 keV to 2keV, Appendix B, Data for Source Energies 190–160, 160–140, and 140–120 keV*, Norman E. Banks, Wayne A. Coleman (April 1972).

Gulf-RT-A10883, *Some Broad-Group Gamma-Ray Production Cross Sections*, M. P. Fricke (November 1971).

LA-5137, *Coupled Neutron-Gamma Multigroup-Multitable Cross Sections for 29 Materials Pertinent to Nuclear Weapons Effect Calculations Generated by LASL/TD Division*, H. A. Sandmeier, G. E. Hansen, R. E. Seamon, T. J. Hirons, A. H. Marshall (February 1974).

UCRL-51427, *Evaluated Neutron Reaction Data for Uranium 238*, R. J. Howerton, M. H. MacGregor (July 1973).

SPECIALISTS' MEETING ON SENSITIVITY STUDIES AND SHIELDING BENCHMARKS

A specialists' meeting on Sensitivity Studies and Shielding Benchmarks is being planned by its co-sponsors, the OECD Nuclear Energy Agency (NEA) and the International Atomic Energy Agency (IAEA). The meeting is to be held at OECD Headquarters in Paris, France on October 7–10, 1975. The NEA Committee on Reactor Physics (CRP) will be responsible for the scientific program. Participation, NEA member countries, is by invitation through the national NEA CRP representatives in consultation with the appropriate official authorities. Participation, IAEA member countries, is by nomination by the government of a member state or by an international organization invited to participate. The number of participants is limited to 50–60.

The preliminary program includes: sources of error in design calculations, design and execution of benchmark experiments, calculations for benchmarks, analysis and interpretation of benchmark experiments, results of benchmark experiments, and preliminary indications of basic data requirements from benchmark experiments. Deadline for full papers is September 30, 1975. The proceedings of the meeting will be published by OECD NEA.

Detailed information is available from Dr. Jacques Royen, NEA CRP Secretariart, 38 boulevard Suchet, F-75016 Paris, France, from national NEA CRP representatives, or from the IAEA's Reactor Physics Section Head, Division of Nuclear Power and Reactors, Kartner Ring 11, A-1011 Wien (Vienna), Austria.

GLEANED FROM NUCLEAR STANDARDS NEWS

A workshop on Radiation Effects Dosimetry will be co-sponsored by ASTM Committees E-10.07 and F-1.11, the week of Sept. 7 in Chicago, Illinois. Three one-half day sessions are planned on: total doses (x rays, γ rays or electrons), dose rates, and bulk damage by neutrons. Included in discussions are dosimetry measurements associated with radiation of electronic materials and components.

ASTM Committee E-10.08 is planning a short symposium on Experimental Methods for Charged-Particle Irradiations. Co-sponsored by the ERDA Div. of Controlled Thermonuclear Research, it will be held in Gatlinburg, Tennessee, September 30. Papers are being solicited on: accelerators and sources;

vacuum technology and residual gas measurement; sample holders, temperature measurement, and control; particle flux and energy measurement; and novel devices and techniques. For further details, including paper submission, contact David Kramer 213/341-1000, ext. 1576.

The National Bureau of Standards (NBS) has planned the formation of a National Conference on Radiation Measurements (NCRM). The first of two meetings for the purpose of planning this group was scheduled for Wednesday, June 11. The second meeting, for the organization of NCRM, will be held on August 27, 1975, 9am to 5pm in C301 Center for Radiation Research, Bldg. 245, at the National Bureau of Standards, Gaithersburg, Maryland. A major expected goal of NCRM will be to act as a forum for the exchange of views on the present status and future needs of systems used to measure radiation for the protection of radiation workers and the general public. Additional anticipated objectives will be studies, reviews of existing radiation measurement systems, the sponsorship of technical meetings and development of future measurement systems to meet needs of regulatory bodies, and medical and industrial communities. (FR 5/8/75).

A multilanguage Nuclear Energy Dictionary (Swedish, English, French and German) has been published. The dictionary is organized into 50 sections (radiation protection, reactor types, reactor safety, etc.), and covers about 1,400 terms in its 416 pages. It is available from Tekniska Nomenklaturcentralen, Box 43041, 100 72 Stockholm Sweden, for 60 kronor (about $15).

USEFUL DOCUMENT AVAILABLE

In recent weeks RSIC has received several requests for *Report Number Codes Used by the USAEC-TIC in Cataloging Reports,* (TID-85-R11) compiled by Helen W. White and Edna Cockrell of ERDA's Technical Information Center in December 1974. It is available in hard copy ($7.60) from National Technical Information Service (NTIS), National Bureau of Standards, U. S. Dept. of Commerce, Springfield, Virginia 22151.

INTERNATIONAL CODATA CONFERENCE CALLS FOR PAPERS

The Fifth Biennial International CODATA Conference will be held on June 28–July 1, 1976 at the University of Colorado in Boulder, Colorado (USA) at the invitation of the National Academy of Sciences. CODATA (Committee on Data for Science and Technology) is an interdisciplinary committee of the International Council of Scientific Unions (ICSU) which deals with data of importance to science and technology, their compilation, critical evaluation, storage, and retrieval. Its scope includes quantitative data on the properties and behavior of matter, characteristics of biological and geological systems, and other experimental and observational data. CODATA covers all disciplines represented within the member unions of ICSU, i.e., the physical sciences, astronomy, the geo-sciences, and the life sciences, but its activities concentrate on problems which are common to the various disciplines. Its purpose is to promote data compilation and evaluation, to improve the quality of data collections and their usefulness to the user community, and to improve data accessibility. The CODATA Secretariat is located at 51 boulevard de Montmorency, 75016 Paris, France.

The scope of the Conference will include: methodology of data evaluation including statistical techniques for data analysis; procedures for correlating, extrapolating, and estimating data; data needs for mathematical modelling, technological impact assessment, process design, education, and other applications; descriptions of existing or planned data collection and publication activities; and machine techniques for storage, retrieval, and dissemination of numerical data.

Users of data, as well as those involved in data compilation, data evaluation, and data handling are invited to submit papers on subjects within the scope of the Conference. The title, together with a brief description of the contents of the paper should be submitted as soon as possible, but not later than November 1, 1975, to the Chairman of the Program Committee, Dr. David R. Lide, Jr., National Bureau of Standards, Washington, DC 20234, USA. Authors of papers will be notified before January 1, 1976, about the acceptance of their papers and will receive instructions on providing an abstract at that time. The

proceedings of the Conference will be published in the CODATA Bulletin, the principal publication medium of CODATA.

The total cost for housing and meals is expected not to exceed $85 for single occupancy, $70 per person for double, with somewhat lower rates for accompanying children. Housing and meals will be in the Kittridge Residence Hall of the University. The Conference fee is expected to be $40 for participants. Nominal charges will be made for sightseeing, guest program activities, and use of recreational facilities of the University.

An intent to attend the conference, with name, mailing address, telephone/telex number, and number of guests, should be mailed to: Dr. H. van Olphen, National Academy of Sciences, 2101 Constitution Avenue NW, Washington, DC 20418, USA for persons living in the Western Hemisphere and Japan, and to the CODATA Secretariat (address above) for persons living in other parts of the world.

CHANGES TO THE DATA LIBRARY COLLECTION (DLC)

The following changes were made during the month.

DLC-7E/HPICE

This evaluated photon interaction library in ENDF file 23 and file 27 formats was updated by the addition of ENDF file 27 incoherent scattering functions and coherent scattering form factors. Coherent and incoherent scattering cross sections were obtained by integrating the file 27 data and were used to replace corresponding values in the existing file 23 data. A new total cross section was calculated to reflect these new values under the assumption that the values for photoelectric and pair production cross sections remain unchanged. Contributors: National Bureau of Standards, Kaman Sciences Corporation, Los Alamos Scientific Laboratory, and Lawrence Livermore Laboratory.

DLC-34/LENDL

The Livermore Evaluated Neutron and Gamma-Ray Production Cross Section Library (LENDL) in ENDF format is now available on a single blocked tape or seven unblocked tapes. Data for 81 materials are available with many evaluated sets containing gamma-ray production data. Ref. UCID-16727.

DLC-37/EPR

This data package was updated to correct the retrieval program by changing array dimensions to be compatible with the cross-section table size of the 121 group data library. The need for the correction was called to RSIC attention by Otto Lazareth of Brookhaven National Laboratory. The library is a coupled set of 100-group neutron and 21-group gamma-ray cross sections for EPR and other fusion reactor conceptual design calculations contributed by Oak Ridge National Laboratory.

CHANGES TO CODE COLLECTIONS (CCC and PSR)

The following changes have been made to the code collection during the month.

CCC-17/O5R

The general purpose Monte Carlo neutron transport code package has been extended by an ICL-1905 version (CCC-17B) contributed by the Hungarian Academy of Science's Central Research Institute for Physics, Budapest. The package now contains two versions: CCC-17A, IBM 360—also available in the Argonne Code Center and in OECD Nuclear Energy Agency's Computer Program Library, Ispra, Italy and CCC-17B, the ICL-1905 above. A library of cross sections is also available.

CCC-263/AIRBORNE

This Gaussian plume model—airborne contaminants dispersion code package was contributed by Oak Ridge National Laboratory. FORTRAN IV; IBM 360. Reference: ORNL-TM-4674.

PSR-63/AMPX-I

The AMPX-I modular code system for generating coupled multigroup neutron-gamma-ray data libraries (IBM and CDC versions) has been updated to correct errors in the DT subroutine in the XSDRNPM module called to RSIC attention by Paul Pickard, Sandia, and N. M. Greene, ORNL. A statement describing the necessary changes is available from RSIC or the updated code package may be requested.

We have just been notified by N. M. Greene of modifications to be made to correct an error in the XLACS module of AMPX-I uncovered by SAI's John Reed and also in the CRRCT subroutine of NITAWL noted by ORNL's Mike Westfall. RSIC is making the modifications to the open code package here. A statement of the required changes will be mailed to requesters.

PSR-92/FORIST

Neutron spectrum unfolding code, based on FERDOR (PSR-17), with optimized resolution using an iterative smoothing technique has been packaged. FORTRAN IV; IBM 360. Contributor: Nuclear Engineering Program, University of Illinois, Urbana.

PSR-93/PUFF

ENDF/B neutron error file processing code for the generation of multigroup cross sections and covariance matrices was contributed by Oak Ridge National Laboratory. FORTRAN IV; IBM 360.

PERSONAL ITEMS

M. L. Weiss, a member of the CRBR Shielding Group of the General Electric Company in Sunnyvale, California, has returned to his normal work station following a year's assignment with the CRBR Shielding Group in the Neutron Physics Division, Oak Ridge National Laboratory.

Kenneth A. Friedman, Bell Telephone Laboratories, has changed his work location from Madison to Holmdel, New Jersey.

Tetsuo Yamazaki, Tokyo, Japan recently described the work of his group at the Tanashi Branch of the Electrotechnical Laboratory as follows: *Our group is making various experiments which are chiefly concerning the standardization of (energy) fluence, absorption, etc., using a 35 MeV electron LINAC. Main subjects at present are (1) energy loss of electrons, (2) spatial distribution of electrons or energy dissipation in various matter, (3) radiation effects on various matter, and (4) photonuclear cross sections.*

RSIC Note: We appreciate receiving such feedback from the community we serve.

The National Neutron Cross Section Center (NNCSC) has recently added to its staff at Brookhaven National Laboratory (BNL) several individuals well known in the industry. Their names, and that of the installation with which they were most recently associated, are: **Leo Levitt,** TRW at Redondo Beach, California; **Norman Holden,** GE-KAPL, Schenectady, N.Y.; **Philip Rose,** FFTF, Westinghouse, Pa.; **Charles Dunford,** IAEA, Vienna, Austria; **Muudrathi Divadeeman,** Duke University; and **Tom Burrows,** University of Kentucky. Some of these gentlemen will be remembered from work of several years duration at Atomics International.

VISITORS TO RSIC

Visitors to RSIC during the month of June were: Bruce Twining, ERDA-DCTR, Washington, D.C.; Frank Szabo, Defense Research Board, Ottawa, Ontario, Canada; Richard Boughner, Control Data Corporation, Concord, Tennessee; Charles D. Swanson, Control Data Corporation, Minneapolis, Minnesota; and T. B. Borak, Argonne National Laboratory, Argonne, Illinois.

JUNE 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

AAEC/E-343
Comparison of Calculations of a Reflected Reactor with Diffusion, SN and Monte Carlo Codes.
McGregor, B.
January 1975
Dep., NTIS (U.S. Sales Only) $4.00

ACF-411-251
Corrosion Study on Materials Used in the Privy Roof Mounted Shield.
Hanks, J.G.
August 9, 1965
Dep., NTIS $4.00

ACF-SA-727
Privy Roof Mounted Shield and Shield Support. Design Progress Report.
Martin, L.P. (Ed.)
June 15, 1965
Dep., NTIS $21.50

ANU-P-601
Program for Calculation of Gamma-Ray Angular Distributions Following Statistical Compound Nucleus Reactions (Supersedes Sections of ANU-P-584).
Kean, D.C.
September 1974
Dep., NTIS (U.S. Sales Only) $4.00

BNL-19789; CONF-750303-53
Neutron Capture Cross Section Measurement Techniques.
Chrien, R.E.
1975
Dep., NTIS $4.00

BNL-19885
Applications of Controlled Thermonuclear Reactor (CTR) Fusion Power in the Steel Industry.
Jordan, R.K.; Steinberg, M.
March 1975
NTIS

BNL-19958; CONF-750303-63
Neutron Cross Sections and Their Uncertainties Obtained from Nuclear Systematics.
Pearlstein, S.
March 3, 1975
Dep., NTIS $4.00

BNL-50442; ENDF-208
Evaluation of the Neutron and Gamma-Ray Production Cross-Sections for 55-Mn.
Takahashi, H.
November 1974
Dep., NTIS $4.25

BNWL-B-389(Supp.)
DACRIN: A Computer Program for Calculating Organ Dose from Acute or Chronic Radionuclide Inhalation: Modification for Gastrointestinal Tract Dose.
Strenge, D.L.
February 1974
Dep., NTIS $5.45

BNWL-SA-5229; CONF-750303-59
Sensitivity Study of Data Deficiencies, Weighting Functions, and 14 MeV Neutron Source Spectrum Effects in a ^{238}U Fueled Fission-Fission Hybrid Blanket.
Leonard, B.R.,Jr.; Jenquin, U.P.; Lessor, D.L.; Newman, D.F.; Stewart, K.B.
March 1975
Dep., NTIS $4.00

CEA-R-4597 (In French); Thesis
Determination of Thermal and Epithermal Neutron Flux at the Center of a Polyethylene Sphere Irradiated by Neutrons Between 10 eV and 14 MeV: Dosimetry Applications.
Lymberis, C.
December 1974
Dep., NTIS (U.S. Sales Only) $6.75

CONF-740940-20
Studies of Energy Deposition by Neutrons.
Caswell, R.S.; Coyne, J.J.; Randolph, M.J.
1974
Dep., NTIS $4.25

CONF-741109-5
Recent Trends in Reactor Shielding in the USA.
From International Symposium on Radiation Physics, Calcutta, India (30 November 1974)
Trubey, D.K.
1974
Dep., NTIS $4.00

CONF-750303-52
Benchmark Experiments for Nuclear Data.
Bohn, E.M.; Maerker, R.E.; McCrosson, F.J.; LaBauve, R.J.; Magurno, B.A.; Schenter, R.E.
March 3, 1975
Dep., NTIS $4.00

CONF-750424-1
Management of Wastes from the Nuclear Fuel Cycle.
Blomeke, J.O.
1975
Dep., NTIS $4.25

COO-2280-17
Interior Corner Problem for the Neutron Diffusion Equation.
Bareiss, E.H.; Vickery, S.R.
November 1974
Dep., NTIS $7.50

DHEW(FDA)75-8023
Progress in Radiation Protection.
U.S. Dept. of Health, Education, and Welfare, Public Health Service, Bureau of Radiological Health, Food and Drug Administration
1974
GPO

EURFNR-1194; KFK-1959 (In German)
Measurement and Calculation of Neutron Spectra Near a Sodium/Iron Interface.
Kappler, F.
April 1974
Dep., NTIS $7.75

EURFNR-1197; KFK-1994 (In German)
Proton Recoil Spectrometer for In-Pile Measurements in the Energy Range Between 500 keV and 3 MeV.
Korthaus, E.
June 1974
Inst. fuer Angewandte Systemtechnik und Reaktorphysik, Kernforschungszentrum Karlsruhe (F. R. Germany)

FZK-365
Evaluation of Cryogenic Insulation Materials and Composites for Use in Nuclear Radiation Environments. Materials Test and Propellant Heating Test. Quarterly Progress Report, 1 November - 31 January.
Kerlin, E.E.; Elliott, R.A.; Crabtree, R.D.
February 1969
Dep., NTIS $6.00

HEDL-TME-75-26
A User's Manual for Computer Code RIBD-II, A Fission Product Inventory Code.
Marr, D.R.
January 1975
Hanford Engineering Development Laboratory

ICRU-Pub.No.2
Permissible Dose for Internal Radiation.
International Commission on Radiological Protection
1974
Pergamon Press, Maxwell House, Fairview Park, Elmsford, New York 10523 $6.50

JUL-1127-RG (In German)
Method for the Determination of the Space-Dependent Tritium Production Rate in a Fusion Reactor Blanket Model with the Aid of Solid-State-Track Detectors.
Geiser, H.; Cloth, P.
October 1974
NTIS

KFKI-75-21

Monte Carlo Calculated Spectra of Neutrons Transmitted Through and Reflected from Homogeneous Polyethylene Slabs.

Koblinger, L.; Palfalvi, J.

February 1975

Dep., NTIS (U.S. Sales Only)

LA-5794-M

A Guide to Gamma-Ray Assay for Nuclear Material Accountability.

Reilly, T.D.; Parker, J.L.

March 1975

Dep., NTIS

LA-UR-75-185; CONF-750406-4

Discrete Ordinate-to-Spherical Harmonic Conversions for Ray Effect Mitigation in X-Y Geometry.

Miller, W.F.,Jr.; Reed, W.H.

1975

Dep., NTIS $4.50

LA-UR-75-425; CONF-750335-44

Radioactivity, Shielding, Radiation Damage, and Remote Handling.

Wilson, M.T.

March 12, 1975

Dep., NTIS $4.00

LNF-74/62(R)

Nuclear Scattering of Monochromatic and Plane-Polarized Gamma Rays. Proposed Experiments.

Fubini, A.; Marino, A.; Matone, G.; Prosperi, D.; Roccella, M.; Schaerf, C.

November 29, 1974

Dep., NTIS (U.S. Sales Only) $4.00

NAA-SR-9400(Vol.5)

Lithium Hydride Technology: V. Testing and Examination of SNAP Shadow Shields.

Welch, F.H.

August 31, 1967

Declassified November 5, 1971

Dep., NTIS $7.75

NBS Monograph 138

MeV Total Neutron Cross Sections.

Schwartz, R.B.; Schrack, R.A.; Heaton, H.T.,II

January 1974

GPO

N.E.A.-CPL Newsletter No.18

Service on Experience of Code Utilization.

Donnelly, I.J.; Ponti, C.; Mennig, J.; Halin, J.; Lepori, C.; Asaoka, T.; Takeuchi, K.; Palmiotti; Salvatores; Rief, H.

April 1975

NEA Computer Program Library, Casella Postale N.15, 21027 - Ispra(Varese), Italia

NCRP-42; ISBN-0-913392-24-3

Radiological Factors Affecting Decision-Making in a Nuclear Attack.

National Council on Radiation Protection and Measurements.

November 15, 1974

NCRP Publications, P.O. Box 30175, Washington, D.C.

NTO-R-0111

Shielding Integrity Check (SIC) Tests for the E-MAD Facility. Phase IV. Final Report.

Britton, J.M.

June 27, 1967

Dep., NTIS $4.25

ORNL-TM-4663

CONDOS - A Model and Computer Code to Estimate Population and Individual Radiation Doses to Man from the Distribution, Use, and Disposal of Consumer Products that Contain Radioactive Materials.

O'Donnell, F.R.; McKay, L.R.; Burke, O.W.; Clark, F.H.

May 1975

NTIS

ORNL-TM-4750

FABGEN, A Transient Power-Generation and Isotope Birth Rate Calculator.

Roland, H.C.

April 1975

NTIS

ORNL-TM-4804

Method for Calculating the Steady-State Distribution of Tritium in a Molten-Salt Breeder Reactor Plant.

Briggs, R.B.; Nestor, C.W.

April 1975

Dep., NTIS $5.45

ORNL-TM-4896
A Revised Light Element Library for the ORIGEN Code.
Kee, C.W.
May 1975
NTIS

PTB-FMRB-58 (In German)
Method for the Simulation of a Lattice-Shaped Reflecting Array of Identical Fuel Containers Using the Monte Carlo Computer Program MORSE-K.
Schweer, H.H.
November 1974
Dep., NTIS (U.S. Sales Only) $4.25

RN-TM-0584
Shielding Trade Study Interim Status Report.
Koebberling, K.O.; Rogers, D.R.; Lindsey, B.A.; Courtney, J.C.
May 1969
Dep., NTIS $8.00

RN-TM-0597
Preliminary Nuclear Design of External Disk Shield.
Rogers, D.R.; Warman, E.A.
April 1970
Dep., NTIS $4.50

RN-66250(Vol.I)
Synthesis of Calculation Methods for the Design and Analysis of Radiation Shields for Nuclear Rocket Systems. Volume I. Technical.
Aerojet-General Corp., Sacramento, Calif.
March 1966
Dep., NTIS $11.25

RRA-T-708
Monte Carlo Calculations of Gamma-Ray Kerma Rates in NERVA Payload Configurations.
Price, J.H.; Wells, M.B.
June 1, 1970
Dep., NTIS $6.75

RRA-T-710
Monte Carlo Calculations of Gamma-Ray Kerma Rates in NERVA Payload Configurations with Extended Propulsion Module.
Warkentin, J.K.; Price, J.H.; Wells, M.B.
July 1, 1970
Dep., NTIS $9.00

SAI-74-561-LJ; DNA-3479F
Evaluation of Neutron and Photon-Production Cross Sections for Natural Magnesium.
Drake, M.K.; Fricke, M.P.
January 17, 1975
Science Applications, Incorporated, 1200 Prospect Street, La Jolla, California 92037

STI/DOC-10/156, pp.87-272
Tables and Graphs of Cross-Sections for (n,p), (n,alpha) and (n,2n) Reactions in the Neutron Energy Region 1-37 MeV.
Bormann, M.; Neuert, H.; Scobel, W.
1974
IAEA

STI/DOC-10/156, pp.273-324
Cross-Sections for Fission Neutron Spectrum Induced Reactions.
Calamand, A.
1974
IAEA

STI/DOC-10/156, pp.475-558
Photonuclear Cross-Sections.
Bulow, B.; Forkman, B.
1974
IAEA

UCID-16728
Comparison of Calculated and Experimental Neutron Spectra from the LLL Pulsed Sphere Program Using the TART Monte Carlo Code and the LLL Evaluated Nuclear Data Library.
Howerton, R.J.
May 1972
Dep., NTIS $5.00

UCID-16754
DT Fusion Neutron Irradiation of LASL-BNL Superconductor Wires, LLL Copper Tensile Specimens, ORNL Magnesium Oxide Crystal, UW-LLL High Purity Metallic Foils, and SLL Fiber Optic Bundles.
MacLean, S.C.
March 27, 1975
Dep., NTIS $4.00

UCRL-76263; CONF-750303-46
238-U Pulsed Sphere Measurements and CTR Fusion-Fission Blanket Calculations.
Wong, C.; Anderson, J.D.; Haight, R.C.; Hansen, L.F.; Komoto, T.
February 1975
Dep., NTIS $4.00

UCRL-76628; CONF-750303-54
Comparison of Doppler Broadening Method.
Cullen, D.E.; Weisbin, C.R.; Wright, R.Q.; White, J.E.
March 12, 1975
Dep., NTIS $4.00

UCRL-Trans-10813
Measurements of Neutron Spectra from Thick Lead and Uranium Targets Using a Single-Crystal Spectrometer.
Narziev, Kh.; Matusevich, E.S.; Daruga, V.K.
1973
Dep., NTIS $4.00

UWFDM-119
A Tokamak Engineering Test Reactor.
Conn, R.W.; Jassby, D.L.
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