RSIC Newsletter

RADIATION SHIELDING INFORMATION CENTER

OAK RIDGE NATIONAL LABORATORY

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FOR THE U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

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No. 126 *May 1975*

A man's feet must be planted in his country, but his eyes should survey the world.
...Santayana

INTERNATIONAL CONFERENCE ON RADIATION EFFECTS AND TRITIUM TECHNOLOGY FOR FUSION REACTORS

The conference, to be held at the Riverside Motor Lodge, Gatlinburg, Tennessee October 1–3, 1975, will provide a forum for discussion of two important problem areas for the technology of fusion reactors. The physics of plasmas has advanced to a state such that an evaluation of the technology required to construct large experiments and power-producing reactors is timely. This meeting covers radiation effects and tritium technology for fusion reactors.

Sessions: Plenary Session — *Perspectives on the World CTR Program,* R. L. Hirsch (ERDA-DCTR, Washington, D.C.); *Radiation Effects in Fusion Reactors,* G. L. Kulcinski (the Univ. of Wisconsin, Madison, Wisconsin); and *Tritium Technology in Fusion Devices,* J. Darvas (Inst. for Plasma Physics, Julich, West Germany). Concurrent technical sessions on radiation effects include simulation of radiation effects in the CTR environment by analytical and modeling studies, radiation effects studies with fission reactor neutrons and 14-MeV neutrons, damage simulation by ion bombardment, effects of transmutation products in the absence of displacement damage, and synergistic effects of displacements and transmutation products. Concurrent technical sessions on tritium technology include current practices in tritium containment, monitoring, purification, isotopic separation, decontamination, and disposal; behavior of tritium in potential blanket, coolant, and moderator materials; interaction (solubility, permeation, embrittlement, etc.) of tritium with structural metals; methods for recovery of tritium from plasma exhaust, from blanket systems, and from secondary containment; and biological hazards of tritium and its behavior in the environment.

The conference fee is $40 for those paying before September 15, 1975; after that date, $50. The fee will include all official functions and a copy of the proceedings, which will be published in two volumes. A guest program on mountain crafts is also planned.

Preregistration forms are available from J. L. Scott, Metals and Ceramics Division, Oak Ridge National Laboratory, P.O. Box X, Oak Ridge, TN 37830, USA.

STUDENTS HANDBOOK

Jack Courtney is serving as the chairman of the American Nuclear Society Shielding and Dosimetry Division *ad hoc* committee that has the objective of producing a low-cost handbook of shielding data primarily for students. Tables, graphs, and nomograms from a variety of uncopyrighted sources will be presented in a loose-leaf format. The table of contents includes the following topics: conversion factors, radiation sources, charged particle data, geometric considerations and tabulated functions, gamma-ray and neutron attenuation data, health physics data, and special topics. Draft copies of the 200-page handbook are available free as long as the stock lasts. The expense of printing 300 copies has been borne by Louisiana State University. Requests should be sent to Prof. John C. Courtney, Nuclear Science Center, Louisiana State University, Baton Rouge, La. 70803.

IF YOU CHANGE YOUR ADDRESS, please notify us (including Building and Room No. where needed). *Third Class Mail* is returned to us at our expense if the addressee has moved. If your mail is returned, your name will be deleted from our distributions until we hear from you.

COMPARISON OF THE DNA WORKING CROSS SECTION LIBRARY AND ENDF/B-IV

The Defense Nuclear Agency Working Cross Section Library which is distributed by RSIC contains some evaluated data sets which were also submitted for inclusion in the ENDF/B-IV library released during 1974. Some of those DNA data sets have undergone modifications since the ENDF/B-IV version. The table below can be used to clarify the relationship between the current DNA library and ENDF/B-IV.

RELATIONSHIP BETWEEN DNA WORKING CROSS SECTION LIBRARY
EVALUATIONS AND ENDF/B-IV - April 17, 1975

MATERIAL	ENDF/B-IV TAPE(REV.)	-MAT	EQUIVALENT DNA(MAT,MOD)	CURRENT DNA(MAT,MOD)	COMMENTS**
Nitrogen	408(Rev.1)	-1275	(4133,5)	(4133,7)	MOD 6,7 corrects MF=33 bugs
Oxygen	408(Rev.1)	-1276	(4134,3)	(4134,4)	MOD 4 corrects MF=33 bug
Aluminum	405	-1193	(4135,3)	Same	
Lead	408(Rev.1)	-1288	(4136,5)	Same	
Hydrogen	404	-1269	(4148,2)	Same	
Silicon	405	-1194	(4151,3)	Same	
Calcium	401	-1195	(4152,3)	Same	
Beryllium	404(Rev.1)	-1289	(4154,3)	Same	
Sodium	403	-1156	(4156,1)	Same	
Tritium	401	-1169	(4169,1)	Same	
Tantalum	411(Rev.1)	-1285	(4179,4)	Same	DNA version has no resonance parameters
Iron	406(Rev.1)	-1192	(4180,3)	Same	DNA version has no resonance parameters
U-238				(4187,1)	
U-235				(4188,1)	
Carbon	408(Rev.1)	-1274	(4274,1)	Same	DNA has threshold and LR flag errors for MT=91
Gold	411(Rev.1)	-1283	(4283,0)	Same	DNA has γ-production, ENDF/B doesn't
Deuterium			(4502,0)		
He-4	401	-1270	(4504,0)	Same	
Fluorine	411	-1271	(4509,1)	Same	
Magnesium	405	-1280	(4512,1)	Same	
Copper	410	-1295	(4529,1)	Same	
Pu-239				(4539,0)	
Pu-240				(4540,0)	
W-182	401*	-1128	(4582,1)	(4582,2)	DNA has later thermal γ-production
W-183	401*	-1129	(4583,1)	(4583,3)	
W-184	401*	-1130	(4584,1)	(4584,3)	
W-186	401*	-1131	(4586,1)	(4586,2)	

*Later ENDF/B revisions are available for W isotopes, but they do not incorporate the updated thermal γ-production given for the DNA versions.

**More complete information on DNA updates is given in recent RSIC Newsletters.

CHANGES TO THE CODE COLLECTION

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

CCC-54/NRN

A CDC-6600 version of the multigroup removal-diffusion code system for planes, cylinders, and spheres has been provided by Aktiebolaget Atomenergi, Stockholm, Sweden via the Nuclear Energy Agency Computer Programme Library, Ispra, Italy. This version is designated CCC-54C.

CCC-127/MORSE

The CCC-127C CDC-6600 version of this general purpose multigroup Monte Carlo code has been updated to correct an error in the cylindrical geometry package. The complete package or the corrected subroutine may be requested. The error was discovered by the Institute for Atomenergi, Kjeller, Norway.

CCC-181/DEMON

The demonstration neutron, slab geometry Monte Carlo code package has been updated with the addition of the DEMON R source program and some additional sample problems. The addition was contributed by the Nuclear Science Center, Louisiana State Univ., Baton Rouge, Louisiana.

CCC-217/ORIGEN

A CDC CYBER 73 version of the isotope generation and depletion code has been supplied by the Utility Network of America, McLean, Virginia. This version is designated CCC-217B.

CCC-249/HIC-1

The code HIC-1, contributed by Oak Ridge National Laboratory, is a Monte Carlo code for calculating heavy ion reactions at energies less than 50 MeV/nucleon. ORNL-TM-4134 documents the code. Requests for the package should specify CCC-249/HIC-1 and be accompanied by a reel of magnetic tape (2 reels if 7 track is desired).

CCC-256/TDT

A generalized one-dimensional multigroup time-dependent transport and diffusion kinetics code (Time Dependent TASK) was contributed by the University of Tennessee and Oak Ridge National Laboratory. This version is IBM 360, FORTRAN IV. Supporting documentation includes ORNL-TM-4869, -4595, and -3958. Requests should be accompanied by a full reel of magnetic tape.

PSR-63/AMPX

The contributors of the AMPX multigroup coupled cross section processing system have corrected minor errors in the LAPHNGAS and XLACS modules involving the generation of thermal scattering matrices. Both the CDC and IBM versions have been updated and the correction is available upon request.

PSR-66/RNGP

The machine-independent random number generation package was updated by the addition of two random number routines, FLTRNF and RANDU, which were taken from the CCC-127/MORSE package.

PSR-90/NPTXS

This code for producing point cross sections from ENDF resolved and unresolved resonance parameters, one of the PSR-63/AMPX modules, has been made a stand-alone program. The code was contributed by Oak Ridge National Laboratory. Informal documentation is provided for this IBM-360 code which is in FORTRAN IV and assembler language.

PERSONAL ITEMS

Dr. R. T. Perry, formerly of Max Plank Institut fur Plasmaphysik, Garching, Germany is now at Battelle Northwest Laboratory, Richland, Washington.

The Harry Diamond Laboratory is now located at 2800 Powder Mill Road, Adelphi, Maryland.

VISITORS TO RSIC

Visitors to RSIC during the month of April were: Charles Green and John V. McHugh, The Richardson Company, Melrose Park, Illinois; Norman Holden and Sol Pearlstein, National Neutron Cross Section Center, Brookhaven National Lab., Upton, L.I., New York; Dale R. Oden and Turner J. Trapp, Jr.,

Battelle Northwest Laboratory, Richland, Washington; Fritz McDuffie, Information Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee; Fritz Schmidt, Univ. of Stuttgart (IKE), Stuttgart, Germany; Russell M. Ball, Electric Power Research Inst., Palo Alto, California; Gerardo G. Thern, Comision Nacional d'Energia Atomica, Buenos Aires, Argentina; R. C. Ashline, Allied-General Nuclear Services, Barnwell, South Carolina; Luis Garcia de Viedma, Nuclear Energy Agency Computer Programme Library, Ispra (Varese), Italy; Randy Foltz, Utility Network of America, McLean, Virginia; and Steven J. Nathan and James F. Strahl, NUS Corporation, Rockville, Maryland.

APRIL 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

AERE-R-7468
Systematics for Neutron Reactions of the Actinide Nuclei.
Lynn, J.E.
November 1974
Dep., NTIS (U.S. Sales Only) $8.00

AGC-2652
Analysis of the Fast Neutron and Gamma Ray Spectrum for LPR Mechanical Test 901.
Aerojet-General Corp., Azusa, Calif.
September 30, 1963
Dep., NTIS $5.25

BNWL-SA-5106; CONF-740901-18
Radiation Problems Associated with High Exposure Plutonium Transportation.
Faust, L.G.; Brackenbush, L.W.
July 1974
Dep., NTIS $4.00

BNWL-SA-5164(Rev.); CONF-741050-3
Environmental Considerations for Alternative Fusion Reactor Blankets.
Johnson, A.B.,Jr.; Young, J.R.
September 8, 1974
Dep., NTIS $4.00

CEA-N-1726 (In French)
MERCURE-4: Three Dimensional Monte Carlo Program for the Integration of Line of Sight Point Attenuation Kernels.
Devillers, C.; Dupont, C.
July 1974
Dep., NTIS (U.S. Sales Only) $5.00

CEA-N-1761 (In French)
L. ENDF Program.
Beauge, R.
October 1974
Dep., NTIS (U.S. Sales Only) $6.00

CISE-N-169
Beta and Gamma Detection Efficiencies for Some Typical Radionuclides in Sources of Different Matrix and Geometry.
Bonfanti, G.; Triulzi, C.
October 1974
Dep., NTIS (U.S. Sales Only) $4.75

CONF-721115, pp.27-31
Radiation Damage Units for Fast Reactor Steels.
From Conference on Irradiation Embrittlement and Creep in Fuel Cladding and Core Components; London, England (9 November 1972)
Bramman, J.I.
1973
British Nuclear Energy Society, London (1973)

CONF-731015, pp.486-505
Use of Integral Experiments to Improve Neutron Propagation and Gamma Heating Calculations.
From Proceedings of International Symposium on Physics of Fast Reactors. Tokyo, Japan
Oceraies, Y.; Caumette, P.; Devillers, C.; Bussac, J.
1973
IAEA

CONF-740965-1
Studies of Energy Deposition by Neutrons.
Caswell, R.S.; Coyne, J.J.; Randolph, M.L.
1974
Dep., NTIS $4.25

HEDL-SA-755; CONF-741207-2
Damage Function Analysis.
McElroy, W.N.; Simons, R.L.; Doran, D.G.; Odette, G.R.
October 21, 1974
Dep., NTIS $4.75

HEDL-TME-72-129
LMFBR Reaction Rate and Dosimetry. Fifth Quarterly Progress Report, June-August 1972.
McElroy, W.N. (Comp.)
September 1972
Dep., NTIS $9.75

INDC(CCP)-43/L
Nuclear Constants. Issue No.7.
Kuznetsov, V.A. (Ed.)
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.105-136
Differential Cross-Sections for Inelastic Scattering of Neutrons by Cr, Mn, Fe, Co, Ni, Cu, Y, Zr, Nb, W and Bi Nuclei.
Lovchikova, G.N.; Salnikov, O.A.; Kotelnikova, G.V.; Trufanov, A.M.; Fetisov, N.I.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.137-200
Energy Spectra of Inelastically Scattered Neutrons for Cr, Mn, Fe, Co, Ni, Cu, Y, Zr, Nb, W and Bi.
Salnikov, O.A.; Lovchikova, G.N.; Kotelnikova, G.V.; Trufanov, A.M.; Fetisov, N.I.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.201-224
Isomer Ratios and Gamma Spectra in the Radiative Capture of Thermal Neutrons.
Dovbenko, A.G.; Ignatyuk, A.V.; Tolstikov, V.A.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.243-248
Radiative Capture of Neutrons by 238-U in the BR-5 Reactor Core Spectrum (Uranium Carbide Variant).
Ivanov, V.I.; Tolstikov, V.A.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.260-265
Gamma Rays from Radioactive Capture of Fast Neutrons in Fe, Ni, and Cu.
Bakov, A.T.; Shcherbakov, O.A.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.266-269
Angular Distributions of Photoneutrons in the Interaction of 23-MeV Electrons with Copper, Tungsten and Lead Targets.
Kovalev, V.P.; Kharin, V.P.; Gordeev, V.V.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.270-271
Photoneutron Yields as a Function of the Diameter and Thickness of Copper, Tungsten and Lead Targets.
Kovalev, V.P.; Kharin, V.P.; Gordeev, V.V.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.290-297
Recoil Proton Spectra in a Hydrogen-Filled Proportional Counter.
Davletshin, A.N.; Tolstikov, V.A.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.302-320
Activation Detectors for Neutron Detection (Review).
Vasilev, R.D.; Grigorev, E.A.; Yaryna, V.P.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.380-388
Spatial-Energy Distribution of Fast Neutrons in Two-Layer Iron-Water Shielding.
Ganshin, A.I.; Degtyarev, S.F.; Polivansky, V.P.; Surorov, A.P.; Tarasov, V.V.; Tikhonov, V.K.; Tsypin, S.G.; Shulgin, A.I.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.389-405
Differential Albedos of Fast Neutrons for Carbon and Boron Carbide.
Germogenova, T.A.; Klimanov, V.A.; Kobozev, M.G.; Mashkovich, V.P.; Panfilova, E.I.; Petrov, O.G.; Suvorov, A.P.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.406-415
Parameters of the Reflection from Iron of a Filtered Fast Neutron Beam.
Goryachev, I.V.; Suvorov, A.P.; Trykov, L.A.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.416-430
Investigation of the Error Involved in Various Approximations of the Discrete Ordinates Method in Reactor Shielding Calculations.
Suvorov, A.P.; Utkin, V.A.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.431-432
Bremsstrahlung Yields of Electrons with an End-Point Energy of 22.5 MeV as a Function of the Atomic Number of a Target of Variable Thickness.
Kovalev, V.P.; Kharin, V.P.; Gordeev, V.V.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.433-439
Calculation of Atomic Excitation and Elastic Scattering Cross Sections Necessary for Computing the Stopping Power and Ionization Energy of a Substance.
Gerasimov, Yu.S.; Gordeev, I.V.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.440-446
Calculation of Transition Probabilities and Atomic Excitation Functions Necessary for Computing the Stopping Power of a Substance.
Gerasimov, Yu.S.; Gordeev, I.V.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.487-493
Comparison of Techniques and Methods for Measuring the Parameters of Intense Neutron Fields (First Stage).
Borisov, G.A.; Vasilev, R.D.; Galiev, N.B.; Grigorev, E.I.; Yaryna, V.P.
July 1974
IAEA, Vienna

INDC(CCP)-43/L, pp.494-495
Recommended Effective Threshold and Cross-Section Values.
Kramer-Ageev, E.A.; Troshin, V.S.; Borison, G.A.; Vasilev, R.D.; Galiev, N.B.; Grigorev, E.I.; Yaryna, V.P.
July 1974
IAEA, Vienna

LA-5879-MS
A Monte Carlo Method for Problems of Hierarchical Inference.
Everett, C.J.
February 1975
NTIS $4.00

LA-UR-75-351
Application of Bondarenko Formalism to Fusion Reactors.
Soran, P.D.; Dudziak, D.J.
March 1975
Los Alamos Scientific Lab., Univ. of Calif., Los Alamos, New Mexico 87544

NRPB-R-27
Factors for Deriving Absorbed Dose-Rates in Air Due to Beta Particles from Measurements of Absorbed Dose-Rates in Tissue-Equivalent Material.
Francis, T.M.; Pook, E.A.
August 1974
Dep., NTIS (U.S. Sales Only)

ORNL-TM-4566
Tenth Dosimetry Intercomparison Study August 27 - September 7, 1973.
Dickson, H.W.; Haywood, F.F.; Becker, K.
March 1975
NTIS

ORNL-TM-4725
Analysis of Dosimetry Data from the Aluminum and Beryllium Irradiation Experiment in the RB-7 Facility of HFIR.
Kerr, H.T.; Allen, E.J.; Swanks, J.H.
January 1975
Dep., NTIS $4.00

ORNL-TM-4871
CRUNCHER - A Channel Compression Device for Time-of-Flight Experiments.
Remez, L.A.
April 1975
NTIS

RN-PA-0020
Seminar/Workshop Material on Kernel Techniques for Nuclear Rocket Propellant Tank Geometry/Shielding Analyses.
Aerojet-General Corp., Nuclear Div., Sacramento, Calif.
August 18, 1969
Dep., NTIS $12.25

RN-PA-0024 (Vol.I)
Material Presented to SNPO in Shielding Trade Study Review.
Warman, E.A.; Koebberling, K.O.
October 23, 1969
Dep., NTIS $7.50

RN-PA-0029
Radiation and Shielding Analyses of Propellant Tanks and Payloads. Presentation at SNPO-Cleveland, July 16 and 17, 1970.
Aerojet Nuclear Systems Co., Sacramento, Calif.
July 1970
Dep., NTIS $6.75

RP-SR-003
PHOEBUS-2 Final Report.
Aerojet-General Corp., Sacramento, Calif.
November 1967
Dep., NTIS $12.08

RN-TM-0588
User's Manual: FMC-G, Flexible Monte Carlo-Gamma.
Koebberling, K.O.; Reuss, W.J.
September 1969
Dep., NTIS $4.00

RP-8
Radiation Shielding Design and Analysis Approach for Light Water Reactor Power Plants.
Stone and Webster Engineering Corp., Boston, Mass.
April 1974

SGAE-2320 (In German); RT-78/74 (In German)
Significance of Corrosion Products in the Primary Circuit of Light Water Reactors for Radiation Protection.
Kamelander, G.
September 1974
Dep., NTIS (U.S. Sales Only) $4.75

STI/DOC-10/156, pp.1-13
2200 m/s Neutron Activation Cross-Sections.
Sher, R.
1974
IAEA ($25.00 for complete report)

TID/SNA-28
NERVA Engine Shield Penetration Design Study.
Aerojet Nuclear Systems Co., Sacramento, Calif.
September 1970
Dep., NTIS $5.25

TID/SNA-29
Replaceable Shield Design Study.
Aerojet Nuclear Systems Co., Sacramento, Calif.
September 1970
Dep., NTIS $5.50

TID/SNA-175
Integration Study of Fuel Handling and Radioactive Maintenance Systems, Fast Flux Test Facility.
Aerojet-General Corp., Nuclear Div., Sacramento, Calif.
October 1968
Dep., NTIS $9.25

TID/SNA-341
LMFBR Fuel Shipping Cask System Evaluation.
Aerojet Nuclear Systems Co., Sacramento, Calif.
October 15, 1970
Dep., NTIS $7.50

TID/SNA-534
Replaceable Shield Design Study.
Aerojet Nuclear Systems Co., Sacramento, Calif.
September 1970
Dep., NTIS $5.50

UCID-16696
DT Fusion Neutron Irradiation of Two BPNL Particle Release Experiments.
MacLean, S.C.
January 30, 1975
Dep., NTIS $4.00

UCRL-50400 (Vol.16)
An Integrated System for Production of Neutronics and Photonics Calculational Constants. Vol.16. Tabular and Graphical Presentation of 175 Neutron Group Constants Derived from the LLL Evaluated Neutron Data Library (ENDL).
Plechaty, E.F.; Cullen, D.E.; Howerton, R.J.; Kimlinger, J.R.
January 29, 1975
Lawrence Livermore Lab., Univ. of Calif., Livermore, Calif.

UCRL-51306, Rev.1
An Evaluated Data Set for Tantalum.
Howerton, R.J.; Haight, R.C.; MacGregor, M.H.; Perkins, S.T.
February 27, 1975
NTIS

UWFDM-15
Comparison of Displacement and Gas Production Rates in Current Fission and Future Fusion Reactors.
Kulcinski, G.L.; Doran, D.G.; Abdou, M.A.
April 8, 1974
Nuclear Engineering Depart., Univ. of Wisconsin, Madison, Wisconsin

UWFDM-120
A Fusion Design Study of Non-Mobile Blankets with Low Lithium and Tritium Inventories.
Abdou, M.A.; Wittenberg, L.J.; Maynard, C.W.
November 1, 1974
Nuclear Engineering Depart., Univ. of Wisconsin, Madison, Wisconsin

Analytical Chemistry, 47(3), 589-591
Determination of Iron in High-Grade Iron-Ore and of Lead in Lead Concentrate by Compton-Scattering of 60-keV Gamma-Rays from Americium-241. (Tech. Note)
Fookes, R.A.; Gravitis, V.L.; Watt, J.S.
1975

At. Energ.(USSR), 37(3), 208-211 (In Russian)
Calculation of the Gamma Radiation Spectrum of a Water-Cooled Reactor.
Brickman, B.A.; Bondarev, V.D.; Zakharov, L.N.
September 1974

Brit. J. Radiol., 47(562), 657-664
Dose-Rate Tables for Clinical 137-Cs Sources Sheathed in Platinum.
Breitman, K.E.
October 1974

Bull. Amer. Phys. Soc., 19(10), 1090
Treatment of Multiple Coulomb Scattering in Monte Carlo Radiation Transport Calculations. (Meeting Abstract)
Hamm, R.N.; Wright, H.A.; Turner, J.E.
1974

J. Belge Radiol., 57(5), 369-375 (In Dutch)
Problems of Radiation Shielding Relative to Rapid Neutron Therapy.
Mijnheer, B.J.
1974

Nucl. Eng. Design, 31(3), 433-448
Selected Engineering and Fabrication Aspects of Nuclear Metal Hydrides (Li, Ti, Zr, and Y).
Van Houten, R.
February 1975

Nucl. Instrum. Methods, 122(3), 405-414
A Model-Based Efficiency Calibration of a Si(Li) Detector in the Energy Region from 3 to 140 keV.
Gallagher, W.J.; Cipolla, S.J.
December 15, 1974

Nucl. Phys. A, A238(2), 189-198
Photoneutron Cross-Section of Be-9.
Hughes, R.J.; Sambell, R.H.; Muirhead, E.G.; Spicer, E.M.
1975

Nucl. Sci. Eng., 56(4), 321-339
A Generalized Diffusion Theory for Calculating the Neutron Transport Scalar Flux.
Alcouffe, R.E.
April 1975

Nucl. Sci. Eng., 56(4), 340-353
Variational Functionals Which Admit Discontinuous Trial Functions.
Nelson, P.,Jr.
April 1975

Nucl. Sci. Eng., 56(4), 360-380
Calculational Methods for Nuclear Heating - Part I: Theoretical and Computational Algorithms.
Abdou, M.A.; Maynard, C.W.
April 1975

Nucl. Sci. Eng., 56(4), 381-398
Calculational Methods for Nuclear Heating - Part II: Applications to Fusion-Reactor Blankets and Shields.
Abdou, M.A.; Maynard, C.W.
April 1975

Nucl. Sci. Eng., 56(4), 411-422
Transmission Probability Method of Integral Neutron Transport Calculation for Two-Dimensional Rectangular Cells. (Tech. Note)
Haggblom, H.; Ahlin, A.; Nakamura, T.
April 1975

Nucl. Sci. Eng., 56(4), 427-431
A Benchmark Experiment of Neutron Propagation in Iron Used to Test ENDF/B Cross-Section Data. (Tech. Note)
Martini, M.; Palmiotti, G.; Salvatores, M.
April 1975

Nucl. Sci. Eng., 56(4), 431-433
Power Reactor Calculations with the Finite Element Program FEM 2D.
Schmidt, F.A.R.; Franke, H.P.
April 1975

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Siting Considerations for Radioactivity in Reactor Effluents During Normal Operation.
Graf, J.M.; Strom, P.O.
April 1975

Nucl. Technology, 25(3), 440-449
Post-Shutdown Fission-Product Decay Heating for Plutonium-239-Fueled Fast Reactors.
Sporrer, R.; Christenson, J.M.
March 1975

Nucl. Technology, 25(3), 450-463
Characteristics of Pulsed Fast Neutron-To-Gamma-Ray Converters.
Kazi, A.H.; Dunn, T.A.; Harrison, R.C.; Williams, D.O.
March 1975

Senpaku Gijutsu Kenkyujo Hokoku, 11(3), 127-137 (In Japanese)
Shielding Calculation for A Doubly Bent Duct in a Concrete Slab Shield for Gamma Radiation.
Yamaji, A.
May 1974

Soviet J. At. Energy(English Transl.), 34(1), 63-65
Buildup Factors of Scattered Gamma-Radiation from a Point Source in an Unbounded Air Medium.
Vrubel, M.N.; Sidneva, S.N.; Strelkov, A.S.
January 1973

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