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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Most roads to success are under construction. Are you ready to work?
. . .Anonymous

INTERNATIONAL SYMPOSIUM ON RADIATION PHYSICS HELD IN CALCUTTA

More than 60 persons attended the International Symposium on Radiation Physics held November 30 to December 4 at the Bose Institute in Calcutta, India. The conference, organized by Prof. A. M. Ghose and his committee, was co-sponsored by the Indian Dept. of Atomic Energy and had the assistance of the IAEA and the U.S. National Bureau of Standards. Seven countries were represented including 6 people from the U.S.: Yo Song, Naval Ordnance Laboratory; Francis G. Perey, D. K. Trubey, and Walter Snyder, ORNL; John Hubbell, NBS; and S. C. Sharma, Univ. of Nebraska.

Dr. Raja Ramanna, Director of the Bhabha Atomic Research Center (BARC) in Bombay, gave the inaugural address.

Each session was opened with an invited review paper. The topics covered were: basic interaction cross sections, radiation transport, radiation scattering in bulk media, radiation shielding, dosimetry and instrumentation. The conference summary was given by Dr. A. K. Ganguly of BARC. The proceedings will be published later.

The conference, a follow-on to a similar national conference in 1970, was coincident with the completion of the 224-cm AVF-type Variable Energy Cyclotron installed by BARC at Calcutta.

It was an interesting conference from several standpoints: it provided an especially good review of Indian research in this area, and Calcutta proved to be a fascinating city to a foreigner. It presented a kaleidoscope in its street scenes, markets, buildings, and temples.

Some of the delegates expressed a desire to hold a similar conference in a few years, and to perhaps organize an international society on radiation physics to better integrate the varied but related research in radiation physics.

After attending the conference, RSIC staff member D. K. Trubey spent several days at BARC in Bombay conferring with staff members concerning their research in radiation transport.

NUCLEAR STANDARDS NEWS

ASTM Committee E-10 on Nuclear Applications and Measurements of Radiation Effects has responded to AEC requests for standards in seven categories, concurred in by E-10's *ad hoc* committee on regulatory standards. Under Chairman R. H. Lewis, a coordinating committee is detailing needs within these areas: HTGR reactors, LMFBR reactors, high-level radioactive waste handling and storage systems, nuclear fuel processing, water-cooled reactors, general engineering and design, sealed sources handling and processing. The group is to find out what standards are prepared and required in these categories. The Committee presented awards to its chairman, L. E. Steele, and to W. Kermit Anderson, Arden Bement, and John Moteff when it met December 3 in San Diego. Awards of Merit for their continuing E-10 work went to Steele and Moteff; Honorary Member Awards were given to Anderson and Bement for past distinguished service for ASTM and E-10. The E-10 Winter Meeting included a half-day symposium on neutron dosimetry and spectrum analysis, sponsored by Committee E-10.05 and hosted by General Atomic.

ANS-19.7 has presented N412, *Standard for the Determination of Neutron Reaction Rate Distributions and Reactivity of Nuclear Reactors,* to BSR for public review concurrent with the review and ballot of N17, Research Reactors, Reactor Physics and Radiation Shielding. A. Weitzberg of General Electric Company is chairman of the working group.

CHANGES TO THE DNA WORKING CROSS SECTION LIBRARY

A new evaluation for gold has been provided and modifications to the existing evaluations for nitrogen and carbon were made. The data are identified as DNA MAT 4133 MOD 6 nitrogen, DNA MAT 4274 MOD 1 carbon, and DNA MAT 4283 MOD 0 gold. The changes are as summarized:

Nitrogen MAT 4133 LASL **MOD 6 December 1974**

A keypunch error in MF = 33 MT = 2 data was corrected to change an exponent from +04 to −02.

Carbon MAT 4274 ORNL **MOD 1 October 1974**

All covariance matrices of cross sections for MT = 1, 51, 91, 102, and 107 are explicitly given in the format 73–7. The covariance of any data for MT = 2, 3, and 4 (which are derived cross sections for this evaluation) are given implicitly by means of a flag, an NC-type subsection, and the value can be obtained knowing that

$$MT_4 = MT_{51} + MT_{91}$$
$$MT_3 = MT_4 + MT_{102} + MT_{107}$$
$$MT_2 = MT_1 - MT_3$$

Gold MAT 4283 ORNL **MOD 0 December 1974**

This version was produced by adding evaluated gamma-ray production data (C. Y. Fu, ORNL) to the ENDF/B-IV MAT 1283 gold evaluation (S. F. Mughabghab *et al.*, BNL).

CHANGES TO THE DATA LIBRARY COLLECTION (DLC)

DLC-2/100G

100 Group Neutron Cross Section Data Generated by SUPERTOG was updated by adding titanium and fluorine to the existing data sets. The updated library is denoted DLC-2E. Requests for the entire library should be accompanied by 5 reels of magnetic tape if written 7-track or a single reel if written 9-track.

CHANGES TO THE COMPUTER CODE COLLECTION

CCC-142/MERCURE 4

The three dimensional code package for integrating multigroup line of sight attenuation kernels by Monte Carlo techniques has been updated by the addition of the ZEBU data library and the ZEBIB (ZEBU library tape maker) source program. Contributed by the Reactor Shielding Group, CEA/CEN Saclay, France through the OECD Nuclear Energy Agency's Computer Programme Library, Ispra, Varese, Italy. MERCURE-4 supercedes all previous versions distributed by RSIC. FORTRAN IV; IBM 360. Reference: CEA-N-1726 (ORNL-tr-2874).

CCC-187/SAM CE

Monte Carlo Time-Dependent Complex Geometry (Combinatorial) Code System for the Solution of the Forward Neutron and Forward and Adjoint Gamma-Ray Transport Equations has been extended to include GAMMA, an element data tape generator which organizes ENDF gamma-ray cross sections into the SAM CE format. Contributed by Mathematical Applications, Inc., Elmsford, New York, the code is written in FORTRAN IV. Versions of the code package: CCC-187A, IBM-360 and CCC-187B, CDC-6600.

CCC-217/ORIGEN

ORNL Isotope Generation and Depletion code package has been extended by the originator to include a supplementary Actinide Library with the Q values modified so that the thermal heat will be alpha-heat and γ-heat = 0. References: ORNL-4628. FORTRAN IV; IBM-360.

CCC-245/TIGER

One-Dimensional Multilayer Electron/Photon Monte Carlo Transport code package has been contributed by Sandia Laboratories, Albuquerque, New Mexico. FORTRAN IV, CDC-6600. Reference: SLA-73-1026.

CCC-248/SWAN

Code System for Analysis and Optimization of Fusion Reactor Nucleonic Characteristics was contributed by the Plasma Physics Laboratory, Princeton University, Princeton, New Jersey. The package includes auxiliary routines: AREAD: Input Data Processor; LIBMAK: ANISN-Type Binary Data Library Manipulator; PPL-ANISN/SWAN LIBRARY PROCESSOR: Data Generator; SIZERS; PPL-ANISN: One-dimensional Discrete Ordinates Radiation Transport Module; and SWIF: Perturbation Calculation and Optimization Module. FORTRAN IV; IBM-360. References: MATT-1008, MATT-1034, MATT-1035, MATT-1036.

PSR-51/SMUG

This Multigroup Photon Cross Section Generator code package has been updated to correct an error in Subroutine XSECT. Card 1173, preceding statement 300, should read PNEW1(IPPI,1) = PNEW1(IPPI,1) − SK. The ORNL contributors called attention to the error.

PSR-79/AMARA

A Code Using the Lagrange's Multipliers Method for Nuclear Data Adjustment has been contributed by *Comitato Nazionale Energia* Nucleare (CNEN), Rome, Italy. FORTRAN IV; IBM-360/75/91. Reference: RT/FI(73)39.

PERSONAL ITEMS

Te-Chang Chan has informed RSIC that effective January 1, 1975 the address for Fluor Pioneer Inc. will be: 200 West Monroe Street, Chicago, Illinois 60606, telephone (312) 368-3500, Cable: PRENGCO, TWX: 910-221-5057.

THE NCRP STANDING ORDER SYSTEM

The National Council on Radiation Protection (NCRP) and Measurements has initiated a mechanism to simplify the process of keeping up-to-date with NCRP recommendations – the Standing Order List for NCRP Publications. Since the RSIC Newsletter reader may not be familiar with it, it seems appropriate to call to your attention the NCRP's system.

Prior to establishment of the standing order system, the user was required to place an order for each new NCRP report as it was published. This meant that he had to be alert for announcements of new publications, and often missed a new report and soon developed gaps in his collection. The Standing Order List allows individuals and organizations to place their names on the list to automatically receive each new NCRP report as it is published. An invoice is sent in accordance with the standing order. To add your name to the Standing Order List direct your request to *NCRP Publications, P.O. Box 30175, Washington, D.C. 20014.*

A list of the currently available NCRP reports follows. Information on their purchase may be secured from the above address.

NCRP Report No.	Title
8	Control and Removal of Radioactive Contamination in Laboratories
9	Recommendations for Waste Disposal of Phosphorus-32 and Iodine-131 for Medical Users
10	Radiological Monitoring Methods and Instruments
12	Recommendations for the Disposal of Carbon-14 Wastes
14	Protection Against Betatron-Synchrotron Radiations Up to 100 Million Electron Volts
16	Radioactive Waste Disposal in the Ocean

22	Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure
23	Measurement of Neutron Flux and Spectra for Physical and Biological Applications
25	Measurement of Absorbed Dose of Neutrons and of Mixtures of Neutrons and Gamma Rays
27	Stopping Powers for Use with Cavity Chambers
28	A Manual of Radioactivity Procedures
30	Safe Handling of Radioactive Materials
31	Shielding for High-Energy Electron Accelerator Installations
32	Radiation Protection in Educational Institutions
33	Medical X-Ray and Gamma-Ray Protection for Energies Up to 10 MeV - Equipment Design and Use
34	Medical X-Ray and Gamma-Ray Protection for Energies Up to 10 MeV - Structural Shielding Design and Evaluation
35	Dental X-Ray Protection
36	Radiation Protection in Veterinary Medicine
37	Precautions in the Management of Patients Who Have Received Therapeutic Amounts of Radionuclides
38	Protection Against Neutron Radiation
39	Basic Radiation Protection Criteria
40	Protection Against Radiation from Brachytherapy Sources
41	Specification of Gamma-Ray Brachytherapy Sources
42	Radiological Factors Affecting Decision-Making in a Nuclear Attack

IEEE CALLS FOR PAPERS

The Institute of Electrical and Electronic Engineers, Inc. has issued a call for papers for the 1975 IEEE Annual Conference on *Nuclear and Space Radiation Effects* to be held on the campus of the Humboldt State University in Arcata, California, on July 14–17. 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: physical properties of irradiated solids including heavy particle and ion implantation damage effects; displacement damage and ionization effects in semiconductor and optical devices, electronic components, transducers, etc.; analysis, prediction, simulation and hardening against radiation effects in circuits and systems; radiation effects quality assurance; effects of space radiation on components and systems including radiation effects problems associated with deep space probes (Jovian Mission); and dosimetry and energy deposition. The following procedure should be followed. Prepare an *informative* summary (not an abstract) that furnishes sufficient detail to present a meaningful review. Summaries are to be *two* to *four* pages in length, including figures, single space text, double space paragraphs, 3/4 inch margins on sides, 5/8 inch at top and bottom of page, footnotes at bottom of page. Include authors' names and company affiliations on the first page of the text. Underline name of the author presenting the paper. Include your mailing address. Obtain all necessary clearances for presenting and publishing the summary and paper at an unclassified meeting. Submit six copies, including one reproducible. The summaries will be printed for publication directly from the material sent.

All summaries will be reviewed, and those accepted will be presented at the conference. Acceptance of a summary for presentation at the conference requires that the author prepare a full-length paper for distribution at the meeting. This paper becomes a candidate for the conference issue of the IEEE Transactions on Nuclear Science, subject to another review. It is not necessary to be an IEEE member to present a paper.

Summaries must be submitted by March 10, 1975 to the 1975 Technical Program Chairman: Itsu Arimura, Mail Stop 2R-00, Boeing Aerospace Company, P.O. Box 3999, Seattle, Wa. 98124, telephone (206) 655-3116.

Acceptance letters will be mailed before May 1, 1975. Registration forms, programs, and additional conference information will be distributed in May.

Conference Chairman: Jerry A. Hood, Sandia Laboratories, Dept. 2110, Albuquerque, N.M. 87115, telephone (505) 264-4300.

CROSS SECTION CONFERENCE PROGRAM

The preliminary program of the Conference on Nuclear Cross Sections and Technology to be held at the Shoreham Americana Hotel, Washington D.C. on March 3–7 includes the following invited papers.

Fission Reactors - I: *Thermal Reactors—Systems and Economics,* James Tulenko, Babcock and Wilcox; *Radioactive Decay Data in Science and Technology,* Charles W. Reich, Idaho National Engineering Laboratory; and *Radioactive Decay Heat Analyses,* Robert E. Schenter and Frank Schmittroth, Westinghouse, Hanford.

Invited, but not accepted at time list was made: *Thermal Reactors—Systems and Economics from the British Point of View,* J. C. Tryor, Winfrith, U.K.; *Neutron Cross Section Uncertainties and their effect on the Calculation of Reactor Design and Performance,* J. S. Story, Winfrith, U.K.; and *Radioactive Decay Heat and Reactor Safety,* D. Devillers, Centre d'Etude Nucleaires de Saclay, France.

Fission Reactors - II: *The Impact of Nuclear Data on Liquid Metal Fast Breeder Reactor Development,* Malcolm W. Dyos and Nam C. Paik, Westinghouse Electric Corporation; *Fast Reactor Safety,* Robert Avery, Argonne National Laboratory; and *After PHENIX What is the Importance of Nuclear Data Programs for the LMFBR Development?* J. Y. Barre, Centre d'Etude Nucleaires, Cadarache, France.

Microscopic Data and Techniques: *New Experimental Techniques and Results in Neutron Spectroscopy,* Charles D. Bowman, National Bureau of Standards; *Measurement Analysis and Implications of the Fission Cross Sections of the Important Fissile Isotopes,* Michael Moore, LASL; *Neutron Capture Cross Section Measurement Techniques,* Robert Chrien, Brookhaven National Laboratory; *Nuclear Models and Data for Gamma Ray Production,* Philip Young, LASL; and *Techniques for the Determination of Neutron Induced Charged Particle Reactions,* H. Liskin, Central Bureau of Nuclear Measurements, Geel, Belgium.

Management of the Actinides: *Fission Theory and Actinide Fission Data,* Andre Michaudon, Centre d'Etudes de-Bruyeres-le-Chatel, France; *Safeguards Against Diversion of Reactor Grade Material for Nuclear Explosives,* Theodore Taylor, International Research and Technology Corporation; and *Nuclear Data for Actinide Recycle,* Edward J. Hennelly, du Pont de Nemours & Company, Savannah River Laboratory.

Cross Sections and Flux Standards: *Thermal Parameters of the Fissile Isotopes,* Bowen Leonard, Battelle Pacific Northwest Laboratories; *World Values of the Thermal Parameters of the Fissile Isotopes,* H. Lemmel, International Atomic Energy Agency, Vienna, Austria; *Neutron Cross Section Standards and Flux Determinations above Thermal Energies,* Allan Carlson, National Bureau of Standards; and *R-Matrix Analysis of the Light Element Standards,* G. M. Hale, LASL.

Various Applications of Nuclear Data: *Some Recent Trends in Radionuclide Applications in Medicine,* Bernard Hoop, Massachusetts General Hospital; *Biomedical Radiation Transport Calculations as an Application of Nuclear Data,* R. G. Alsmiller, Oak Ridge National Laboratory; and *Geochemical Mapping of the Moon by Orbital Gamma Ray Spectroscopy,* Robert C. Reedy, LASL.

Invited, but not accepted at time list was made: *Neutron Therapy and Radiography in Humans,* D. Sylvester, Hammersmith Hospital, London England.

Fusion Reactors: *Nuclear Data Needs for Fusion Reactor Design,* Don Steiner, Oak Ridge National Laboratory; *Model Calculations as One Means of Satisfying the Neutron Cross Section Requirements of the CTR Program,* Donald G. Gardner, Lawrence Livermore Laboratory; and *Energy from Charged Particle Reactions Among Light Nuclei,* T. Tombrello, California Institute of Technology.

Benchmarks and Sensitivities: *Cross Section and Method Uncertainties: the Application of Sensitivity Analysis to the Study of Their Relationship in Calculational Benchmark Problems,* Charles Weisbin, E. M. Oblow, J. Ching, R. Q. Wright, J. E. White, J. Drischler, Oak Ridge National Laboratory; *Benchmark Experiments in Nuclear Data,* Bruce Hutchins, General Electric Corporation, Sunnyvale, California; *Estimated Uncertainties in Nuclear Data–an Approach,* Francis G. Perey, Oak Ridge National Laboratory; and *A Survey of Computer Codes Which Produce Multigroup Data From ENDF/B-IV,* N. M. Greene,Oak Ridge National Laboratory.

DECEMBER 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 SHIELDING LITERATURE

AEC-tr-7550
Regulation on Protection Against Damage by X Rays (X-Ray Regulation: RoeV).
1973
Dep., NTIS $4.75

ANCR-1000-2
Gamma-Ray Spectrum Catalogue Ge(Li) and Si(Li) Spectrometry. Third Edition, Volume 2.
Heath, R.L.
March 1974
Dep., NTIS $25.00

ANCR-1176
Possibilities of Neutron Sources at NRTS for CTR Materials Testing.
Brugger, R.M.
August 1974
Aerojet Nuclear Company

ASTM-DS-54
Radiation Effects Information Generated on the ASTM Reference Correlation-Monitor Steels.
American Society for Testing and Materials
No Date
ASTM, 1916 Race St., Philadelphia, Penn. 19103 *$9.00 Publication Code No. 05-054000-35*

BLG-493
Analysis of a Background Elimination Method in the 6-Li Spectrometry Technique.
De Leeuw-Gierts, G.; De Leeuw, S.; Kamboj, B.K.
June 1974
Centre D'Etude de L'Energie Nucleaire 144, Avenue E. Plasky, Bruxelles 4 (Belgique)

BNL-19191; CONF-740920-12
Gamma-Rays from Neutron Capture in and Between Resonances.
Chrien, R.E.
1974
Dep., NTIS $4.00

BNL-tr-576
Gamma-Ray Decay of Neutron Resonances.
Becvar, F.
1974
Dep., NTIS $4.75

CONF-740903-10
Estimated Data Covariance Files of Evaluated Cross Sections: Examples of 235-U and 238-U.
Perey, F.G.; de Saussure, G.; Perez, R.B.
1974
Dep., NTIS $4.00

CONF-740903-13
ORNL LMFBR Experimental Shielding Program.
Clifford, C.E.
1974
Dep., NTIS $4.00

CONF-740934-2
Nuclear Gamma and Beta Decay.
Lawson, R.D.
1974
Dep., NTIS $4.25

CONF-740940-1
Calculations of the Transport of Fast Neutrons (50 MeV) Through Matter.
Alsmiller, R.G.,Jr.
1974
Dep., NTIS $5.75

CONF-740940-2
Some Advances in Solid-State Fast Neutron Dosimetry.
Becker, K.
No Date
Dep., NTIS $4.00

COO-1671-60
Theory of RBE. Progress Report, 1 January 1974 – 31 December 1974.
Katz, R.
1974
Dep., NTIS $4.00

DL/NSF/P-9
Nuclear Fission.
Irvine, J.M.
September 1974
Daresbury Laboratory, England

ESIS-3; NEA-CRP-L-1
Shielding Benchmark Experiments.
Butler, J.; Nicks, R.
July 1974
EURATOM, Joint Nuclear Research Centre, Ispra Establishment 21020 ISPRA (Va), Italy

FTD-HC-23-719-71; AD-742410
Active Shielding of Spacecraft.
Trukhanov, K.A.; Ryabova, T.Ya.; Morozov, D.Kh.
March 10, 1972
Translation Division, Foreign Technology Div., WP-AFB, Ohio

GA-A-13095
Use of 1DFX Results in Cylindrical Geometry as a Surface Source for 1DFX Calculations in Slab Geometry.
Rouse, C.A.; Mathews, D.
August 1974
Dep., NTIS $4.00

KFKI-74-15
Calculation of Spatial Distribution of Irradiating Flux from Circular and Cylindrical Sources.
Vass, S.
1974
Dep., NTIS (U.S. Sales Only) $4.00

LA-5723-MS
A Second Monte Carlo Sampler.
Everett, C.J.; Cashwell, E.D.
September 1974
NTIS $5.45

LA-5742-MS
Surfaces of Revolution with Various Normal Intersection Properties.
Everett, C.J.; Orr, S.R.
October 1974
NTIS $4.00

ORNL-4997
Neutron Physics Division Progress Report for Period Ending August 31, 1974. Oak Ridge National Lab., Oak Ridge, Tenn.
October 1974
Dep., NTIS $7.60

ORNL-TM-4664
Development of a Code System for Determining Radiation Protection of Armored Vehicles (The VCS Code). Oak Ridge National Laboratory
October 1974
NTIS

ORNL-TM-4702
A Study of the Fission Product Release from a Badly Damaged Water-Cooled Reactor. (Thesis)
Hsia, D.Y.; Chester, R.O.
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NTIS

ORNL-TM-4705
Estimates of Fission-Product Inventories in Fuel Element EO6-01 of the Peach Bottom Core 2: Results, Comparisons, and Sensitivity Study.
Tobias, M.
October 1974
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ORNL-TM-4708
Feasibility Study of a Honeycomb Vacuum Wall for Fusion Reactors.
Cramer, S.N.; Oblow, E.M.
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RT/FI(74)9
Need for Internationally Recommended Cross Sections for Neutron Dosimetry Reactions.
Farinelli, U.
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RT/FI(74)10
Point-Dependent Calculations of the Anisotropic Diffusion Coefficient.
Michelini, M.; Sallam, O.H.
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RT/FI(74)30
Fluxes and Effective Multiplication Factor Evaluation by Escape Probabilities.
Bitelli, G., Torelli, L.
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SLA-74-0239
Users Manual for OMESH, A Self-Organizing MESH Generator Program.
Jones, R.E.
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STI/DOC-10/156; Technical Report Series No.156
Handbook on Nuclear Activation Cross-Sections.
IAEA
1974
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STI/PUB-318,Vol.II; CONF-721203,Vol.II
Neutron Monitoring for Radiation Protection Purposes. Vol.II. Proceedings of a Symposium, Vienna, 11-15 December 1972.
IAEA
1973
IAEA $16.00

STI/PUB-318,Vol.I,13-22; CONF-721203,Vol.I,13-22; IAEA-SM-167/7
Measurement of Spectral Distributions of Neutrons from Radioactive Sources and Uranium-235 Fission, and the Resulting Fluence-Dose Conversion Factors.
Kluge, H.; Weise, K.; Zill, H.W.
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IAEA

STI/PUB-318,Vol.I,23-99; CONF-721203,Vol.I,23-29; IAEA-SM-167/13
Spectral Distribution of Neutrons Outside the Shielding of Neutron Generators.
Sauermann, P.F.; Schafer, W.
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Data Analysis for Low-Resolution Neutron Spectrometry.
Grunauer, F.; Schmatz, W.
1973
IAEA

STI/PUB-318,Vol.I,73-86; CONF-721203,Vol.I,73-86; IAEA-SM-167/45
Prediction of Fast Neutron Spectra in Criticality Accidents.
Cross, W.G.; Ing, H.
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IAEA

STI/PUB-318,Vol.I,87-95; CONF-721203,Vol.I,87-95; IAEA-SM-167/54
Experimental Determination of Response Functions of an Organic Liquid Scintillator in the Energy Range from 0.6 to 12.4 MeV.
Schanzler, L.; Stuker, S.
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A Passive Broad-Energy-Response Neutron Spectrometer-Dosimeter.
Piltingsrud, H.V.; Engelke, M.J.
1973
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STI/PUB-318,Vol.I,201-210; CONF-721203,Vol.I,201-210; IAEA-SM-167/72
Depth-Dose Measurements of D-T Neutrons in Tissue-Equivalent Phantoms.
Broers-Challiss, J.E.; Engels, A.C.; Bouts, C.J.; Broerse, J.J.
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Influence of Detector Type and Equipment on the Sensitivity of Bonner Spheres.
Rohloff, F.; Heinzelmann, M.
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Response of Detectors in Spherical Moderators to Monoenergetic Neutrons.
Bricka, M.; Dolias, M.; Lamberieux, J.; Caizergues, J.
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STI/PUB-343,Vol.I,39-50; CONF-730302,Vol.I,39-50; IAEA-SM-170/56
Nuclear Data Requirements for Fusion-Fission (Hybrid) Reactors.
Wolkenhauer, W.C.; Leonard, B.R.,Jr.
October 1973
IAEA

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Stubbins, W.F.; Wolfe, R.A.
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A Study of Long-Term Heat Generation in Nuclear By-Products from LWR and LMFBR Systems.
Angelo, J.A.,Jr.; Post, R.G.; Haskin, F.E.; Lewis, C.
October 1973
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Cross-Sections for the Creation of Damage.
Lott, M.; Genthon, J.P.; Gervaise, F.; Mas, P., Mougniot, J.C.; Nguyen Van Doan
October 1973
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STI/PUB-343,Vol.I,129-142 (In Russian); CONF-730302,Vol.I, 129-142 (In Russian); IAEA-SM-170/91 (In Russian)
Accuracy of Nuclear Data and Its Effect on Fast-Reactor Design. An Approach to Setting Up Nuclear Data Accuracy Requirements.
Usachev, L.N.; Manokhin, V.N.; Bobkov, Yu.G.
October 1973
IAEA

STI/PUB-343,Vol.I,143-154 (In French); CONF-730302,Vol.I, 143-154 (In French); IAEA-SM-170/69 (In French)
Respective Roles of Evaluations and Integral Experiments in the Physics of Fast Reactors.
Barre, J.Y.; Chaudat, J.P.
October 1973
IAEA

STI/PUB-343,Vol.I,155-162; CONF-730302,Vol.I,155-162; IAEA-SM-170/7
Cross-Section Uncertainty Effects on the Ratio of the High-Energy Neutron Flux to the Power and Resulting Estimation of the Irradiation Limit Errors in a Fast Power Reactor.
Boioli, A.; Cecchini, G.P.; Cosimi, M.; Salvatores, M.
October 1973
IAEA

SU-326-P30-35
Computational Approach to Simultaneous Estimation.
Jennings, L.S.
1974
Dep., NTIS $4.00

SZS-154 (In German)
Gamma Radiation Fields of Evenly Distributed Fission Product Mixtures.
Schuricht, V.; Zappe, D.; Eiteljoerge, N.; Noack, W.
January 1974
Dep., NTIS (U.S. Sales Only) $4.75

TRG-2547
The Solution of the Multigroup Neutron Transport Equation Using Spherical Harmonics.
Fletcher, J.K.
August 1974
Dep., NTIS (U.S. Sales Only)

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