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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As long as a branch of science offers an abundance of problems, so long is it alive;
a lack of problems foreshadows extinction or the cessation of independent
development.   ...David Hilbert

STANDARDS ACTION

The result of several years of effort by an M&C Standards Committee (ANS-10), the *Guidelines for the Documentation of Digital Computer Programs* has recently been approved as ANSI N 413. A limited number of draft copies are available from RSIC.

NUCLEAR MODEL CODES IN NEA CPL

The Committee of the OECD/NEA Computer Program Library (CPL) has agreed that programs for nuclear model calculations be held and disseminated by CPL, subject to supporting action by the NEA Nuclear Data Committee and on the understanding that only a limited number of programs could be accepted. To assist in the selection of nuclear model codes which are considered to be useful and of wide interest, a "List of Computer Programs for Nuclear Cross Section Calculations and Analysis" has been distributed to recipients of NEANDC documents in America, Europe, and Japan to publicize the activity and to encourage exchange through NEA CPL. The IAEA Nuclear Data Section is circulating the list to the INDC (non-OECD countries) distribution.

The OECD/NEA CPL, a clearinghouse for computer programs for reactor calculations, was established in 1964 at the Ispra Joint Research Center of the Commission of European Communities (EURATOM). Thirteen European countries and Japan join in financial support of NEA CPL, which operates in close collaboration with RSIC and the Argonne Code Center through a formal USAEC-NEA Agreement.

A limited number of copies of the List of Codes above may be secured from the Argonne Code Center or from RSIC. Interested requesters may communicate directly with the OECD Nuclear Energy Agency Computer Program Library, Ispra (Varese) Italy.

CHANGES TO THE DNA WORKING CROSS SECTION LIBRARY

The iron and beryllium-9 evaluations were recently modified. The new versions are designated DNA MAT 4154 MOD 3 beryllium-9 and DNA MAT 4180 MOD 3 iron. The changes are summarized as follows.

Beryllium-9 MAT 4154 LLL   MOD 3 September 1974

The energy 14.6 MeV was incorrect and was changed to 14.0 MeV for elastic scattering angular distribution. Angular distributions for MT = 6, 7, 8, and 9 were corrected so that they are now specified in the center of mass system.

Iron MAT 4180 ORNL   MOD 3 August 1974

The interpolation used in file 3 for MT = 51 was changed to be consistent with that used for MT = 4.

CHANGES TO THE DATA LIBRARY COLLECTION (DLC)

DLC-1/LEP   The history tapes generated by LECC for various particles incident on C-12, O-16, A-27, Cr-52, Cu-65, Ru-100, Ce-140, W-184, Pb-207, and U-238 nuclei were converted from binary to BCD form and are available upon request. Data for neutrons, protons, $\pi(+)$, and $\pi(-)$ incident particles of energy 25, 50, 100, 150, 200, 250, and 300 MeV (plus 350 and 400 MeV for neutrons and protons) are given. A total of 10 9-track, blocked, formatted tapes or 5 9-track, blocked, unformatted tapes are required to obtain the entire library. This part of the library is designated *DLC-1C*.

DLC-31/(DPL-1/FEWG1)   An error in the retrieval program ARID has been corrected. This code is used to collapse the few group data to a smaller number of groups or, as we have devised the sample problem, to convert from card image to binary form. It was discovered that ARID, prior to the correction, would incorrectly manipulate the data and introduce errors in the converted data. In subroutine PEN, the following statement should be added after statement 6: IF (NNN.LE.IHT) GO TO 3. The current RSIC package reflects this change.

DLC-32/MONTAGE   The LASL/CTR 100-group neutron cross sections for 88 important structure or coolant activation reactions generated by ETOG or MINX from ENDF/B, BNL-325, or data generated by THRESH. The data have been processed into a format similar to that used for DLC-24/SINEX and a retrieval program to obtain the data in ANISN "activity" format is included. A single reel of magnetic tape is required to obtain the library.

CHANGES TO THE CODE COLLECTION

CCC-194/SMAUG 13   Version 013 of the program for Calculating Neutron and Prompt Gamma-Ray Doses Resulting from an Atmospheric Nuclear Detonation was contributed by the Air Force Weapons Laboratory (AFSC), Kirtland Air Force Base, New Mexico. This version makes obsolete Version 012, in that it incorporates its features. Because of the somewhat simpler version of Subroutine AIRDEN used in the new version, core space required may be slightly smaller and the code may run slightly faster. The only difference in calculated results should be a minor difference in the calculation of silicon gamma-ray kerma, since the new version uses a corrected value for the 0.6 to 0.8 MeV energy band.

CCC-229/KRONIC   The code package used in the Calculation of Annual Average External (Beta and Gamma) Doses From Chronic Atmospheric Releases of Radionuclides has been extended to include source card decks operable on the CDC CYBER-74 system by a contribution of the Occupational and Environmental Safety Department, Battelle Pacific Northwest Laboratories (BPNL), Richland, Washington. In addition, corrections were made in the DOSRFL and DRFACL data libraries on the recommendation of D. L. Strenge of BPNL and S. T. Huang of Ralph M. Parsons Company, Pasadena, California.

CCC-235/INAP   An Integrated Neutron Activation Prediction Code System was contributed by NASA Marshall Space Flight Center, Huntsville, Alabama, and TRW Systems Group, Redondo Beach, California. FORTRAN IV, UNIVAC-1108. INAP represents new code development beyond that of CCC-101/NAP, upon which the activation and decay chain work is based.

CCC-237/BURP 2   A Calculation of Buildup and Decay of Radioactive Fission Products was contributed by the Babcock and Wilcox Company, Lynchburg, Virginia. FORTRAN IV, CDC 6600. BURP 2 calculates the activity of 237 radioactive fission products for up to 100 consecutive reactor operating and shutdown times. It obtains the analytical solution of up to 5 coupled differential equations describing the buildup and loss of radioactive fission products in a nuclear fuel or reactor system. The fission product concentration obtained from these equations are used to calculate activities and gamma-ray source strength.

CCC-238/CARNAC   A code package useful for the calculation of flux and neutron spectra in the case of a criticality accident has been contributed by the Departement de Surete Nucleaire Service d'Etudes de Surete Radiologique, CEA Centre d'Etudes Nucleaires de Saclay, France. FORTRAN IV, IBM 360/75/91. References: CEA-N-1612 (ORNL-tr-2825) and S.E.S.R.-N-05 (ORNL-tr-2822).

PSR-51/SMUG   The Multigroup Photon Cross Section Generator was repackaged as the result of testing changes made in order to read BCD input for the sample problem. As formerly packaged, an input data parameter called for a binary tape and the code package has BCD card images on tape. Changing the 6th parameter in 10$$ array from 0 to 2 (data located in file 3) will effect the change. The problem was called to RSIC attention by Lee Simmons, SAI, Huntsville, Alabama.

PSR-77/ANSIFT   ANSI Standard FORTRAN Sifting Program which has been contributed by Los Alamos Scientific Laboratory, New Mexico. The program itself is written in standard FORTRAN to make it more adaptable for use on other computers. The packaged version is currently operable on the CDC 6600. Reference: LA-5410-MS.

THE RSIC GRAB BAG

Through the generosity of various ORNL 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-3482, *The Testing of* ^{238}*U Secondary Gamma-Ray Production Data Sets From the POPOP*[4] *Library*, W. E. Ford, III and J. S. Gillen (February 1972).

ORNL-TM-4134, *HIC-1, A First Approach to the Calculation of Heavy-Ion Reactions at Energies* $\geq$ *50 MeV/Nucleon*, H. W. Bertini *et al* (January 1974).

ORNL-TM-4222 (ENDF 188), *SDT 11. The ORNL Benchmark Experiment for Neutron Transport Through Iron and Stainless Steel, Part 1*, R. E. Maerker (September 1974).

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

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-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).

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).

ISSUE OF BENCHMARK PROBLEMS

G. L. Simmons, Chairman of the ANS-6 Benchmark Problem Group, has announced that two additional benchmark problems are being issued. The titles are BP-6, *Neutron and Secondary Gamma-Ray Fluence Transmitted Through a Slab of Borated Polyethylene* by C. E. Burgart and BP-7, *A Benchmark Experiment and Calculation for Neutron Transport in Thick Sodium* by R. E. Maerker, F. J. Muckenthaler, R. L. Childs, and M. L. Gritzner. These problems, issued as Supplement 2 of ORNL-RSIC-25 (ANS-SD-9), *Shielding Benchmark Problems*, are available upon request from the Radiation Shielding Information Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37830.

ANS S&D APPOINTMENTS

The ANS Shielding and Dosimetry Division Chairman, D. K. Trubey, has appointed the following new 1974-1975 Division Committee Chairmen: Program – Siegfried Gerstl, Nominations – Norman M. Schaeffer, Publications – Zolin Burson, Membership – Stephen Binney, Honors and Awards – Eric Clarke, Name Change – Jerry Lahti, and Student Handbook – Jack Courtney.

PERSONAL ITEMS

Former Atomic Energy Commission executive *B. W. Colston* has been appointed manager of the newly formed Nuclear Department of San Diego Gas & Electric Company. He will be involved in activities to complete the company's proposed desert nuclear plant near Blythe, California. *Dr. Sotiri Anastasiadis* has recently transferred from The Ralph M. Parsons Co. to Sargent & Lundy in Chicago. *Prof. Dr. J. Ranft* has left CERN in Geneva to be associated with the Physics Department of the Karl-Marx University, German Democratic Republic.

VISITORS TO RSIC

Visitors to RSIC during the month of September were: A. R. Buhl, USAEC, Washington, D.C.; H. Matthaey, Institut fuer Exp. Kernphysik, Karlsruhe, Germany; E. Greenspan, Nuclear Research Center-Negev, Beer Sheva, Israel; J. J. Wagschal, Hebrew University, Jerusalem, Israel; and W. Schuler, NEA Computer Programme Library, Ispra, Italy.

SEPTEMBER 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-7553
 Some Considerations on the Units Used in Radiation Protection Dosimetry.
  Rindi, A.; Thomas, R.H.
  1972
  Dep., NTIS

AECL-4826
 The Dipole Response Coefficient for Cylindrical Channels in Neutron Diffusion Theory.
  Love, M.D.; Kushneriuk, S.A.
  May,1974
  Atomic Energy of Canada Limited, Chalk River

AERE-R-7728
 Neutron Capture Probability for Sodium Activation in Man Phantoms.
  Delafield, H.J.
  April,1974
  NTIS (U.S. Sales Only)

BARC-752
 Neutron Flux Mapping at Apsara Reactor Using Solid State Track Detectors.
  Srivastava, D.S.; Sampathjumar, R.; Chaudhuri, N.K.; Iyer, R.H.
  1974
  NTIS

BNWL-SA-4865; CONF-740402-43
 Conceptual Design of a Fusion-Fission Hybrid Reactor Based on a Mirror Fusion Reactor with a Subcritical Gas Cooled Fission Blanket.
  Wolkenhauer, W.C.; Leonard, B.R.,Jr.; Sutey, A.M.; Moir, R.W.
  1974
  Dep., NTIS $4.25

BRL-R-1734
 The Response of Selected Gamma-Ray Dosimeters to High Energy (2.25-9 MeV) Photons.
  McNeilly, J.H.; Rodgers, M.P.
  August,1974
  NTIS

BRL-R-1736
 Experimental Evaluation of DCPA Standard Method Calculations for Basement Core Structures.
  Schmoke, M.A.; Post, W.J.
  August,1974
  NTIS

CONF-730588
 Radioactive Shipments Through Our States: The Weakest Link. Proceedings of the Second Annual Legislative Workshop, Oak Ridge, Tennessee, May 16-17,1973.
  Southern Interstate Nuclear Board, Atlanta, Ga.
  1973
  Dep., NTIS $5.45

CONF-730907-P1 (In Several Languages)
 Proceedings of the Third International Congress of the International Radiation Protection Association. Washington, D.C., September 9-14,1973.
  Snyder, W.S. (Ed.)
  February,1974
  Dep., NTIS $13.60

CONF-730907-P2 (In Several Languages)
 Proceedings of the Third International Congress of the International Radiation Protection Association, Washington, D.C., September 9-14,1973.
  Snyder, W.S. (Ed.)
  February,1974
  Dep., NTIS $13.60

CONF-740703-3
 Absorbed Dose in Phantoms Which Represent Various Aged Male Humans from External Sources of Photons as a Function of Age.
  Warner, G.G.; Poston, J.W.; Snyder, W.S.
  1973
  Dep., NTIS $4.00

CONF-740901-3
 Combination Neutron and Fire Shield.
  Irvine, A.R.; Shappert, L.B.
  1973
  Dep., NTIS $4.00

DNA-3356F
 Evaluation of Neutron and Photon-Production Cross Sections for Natural Copper.
  Drake, M.K.; Fricke, M.P.
  July 11,1974
  Science Applications, Inc.; 1200 Prospect Street, La Jolla, California 92037

FRNC-TH-470 (In French)
 Some Yield Measurements in the Fission of Th-232 by 14-MeV Neutrons and Reactor Neutrons.
  Chauvin, C.
  1973
  NTIS

GULF-GA-A12499; GA-LTR-4
 Afterheat Calculations for the HTGR.
  Sund, R.E.
  November,1973
  General Atomic Co., San Diego, Calif.

Gulf-GA-B12406
 Cross Sections for the Fort St. Vrain Initial Core.
  Marshall, A.C.
  November,1972
  General Atomic Co., San Diego, Calif.

IA-1293
 Energy Moments Method for Generating Effective Multigroup Cross Sections.
  Gur, Y.; Yiftah, S.
  January,1974
  Dep., NTIS (U.S. Sales Only)

IS-T-636
Determination of the Neutron Energy Distribution from 8 to 20 MeV in a Fast Flux Facility by Using (n,2n) Reactions as Threshold Monitors.
Gill, R.L.
July,1974
NTIS

JINR-P16-7834 (In Russian)
Concrete Shielding of the Electron Accelerators with Energies 0.5 to 10 MeV.
Tsovbun, V.I.
1974
Dep., NTIS (U.S. Sales Only) $4.00

LA-4686-MS(Suppl.)
Shielded Shipping Container for Fissile Material Class 1 or Large Quantities of Radioactive Material, Supplement.
Noyes, H.E.
March,1974
Dep., NTIS $4.00

LA-5563
Measurements of Neutron and Gamma-Ray Spectra from Iron and Tungsten Spheres Bombarded with Neutrons from the 2-H(t,n)4-He Reaction.
Arthur, E.D.; Auchampaugh, G.F.; Drake, D.M.
June,1974
Dep., NTIS $4.00

LA-5589-MS
Shipping Container for Plutonium-238 as Fissile Material Class 1.
Noyes, H.E.
May,1974
Dep., NTIS $4.00

LA-UR-74-652
Materials Problems in Magnetically Confined Pulsed Fusion Reactors.
Green, W.V.; Yeske, R.A.
1973
NTIS

LA-UR-74-771; CONF-740454-1
Creation and Comparison of Finite Difference Analogs of Some Finite Element Schemes.
Swartz, B.K.
1974
Dep., NTIS $5.00

LA-UR-74-883
Fusion Reactor Nuclear Analysis Methods and Applications.
Dudziak, D.J.
June,1974
Dep., NTIS

LIB-Trans-526
Recommendations Concerning the Measurements of Irradiation Received by the Structural Materials of (Atomic) Reactors.
Commission of the European Communities, Geel (Belgium)
1973
NTIS

NEDO-12154-1
Compilation of Fission Product Yields, Vallecitos Nuclear Center,1974.
Meek, M.E.; Rider, B.F.
January 26,1974
NTIS

ORNL-4984
Convergence of the Discrete Ordinates Method for the Transport Equation.
Anselone, P.M.; Gibbs, A.G.
July,1974
NTIS

ORNL-4985
Gamma-Ray Production Due to Neutron Interactions with 68-Zn and the Level Structure of 68-Zn.
Dickens, J.K.
September,1974
NTIS $5.45

ORNL-TM-3995
MACKLIB - 100-Group Neutron Fluence-to-Kerma Factors and Reaction Cross Sections Generated by Mack Computer Program from Data in ENDF Format.
Abdou, M.A.; Roussin, R.W.
August,1974
NTIS

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

ORNL-TM-4619
Shielding Design Calculations for ORMAK - F/BX.
Gabriel, T.A.; Santoro, R.T.; Engle, W.W.,Jr.
August,1974
NTIS

ORNL-TM-4638
Comparisons of Predictions from Two Intranuclear-Cascade Models with Measured Secondary Proton Spectra at Several Angles from 62- and 39-MeV Protons on Various Elements.
Bertini, H.W.; Harp, G.D.; Bertrand, F.E.
August,1974

ORNL-TM-4648
Vehicle Code System (VCS) User's Manual.
Rhoades, W.A.; Emmett, M.B.; Morrison, G.W.; Pace, J.V.,III; Petrie, L.M.
August,1974
Dep., NTIS $7.00

ORNL-RSIC-5(Vol.4)
Bibliography, Subject Index, and Author Index of the Literature Examined by the Radiation Shielding Information Center (Reactor and Weapons Radiation Shielding).
Gurney, J.; Gustin, A.B. (Eds.)
March,1974
Dep., NTIS $13.60

ORNL-TR-2831; GKSS-73/E/17 (In German)
    LGH-G: A Program for the Calculation of Gamma Radiation Through Partially Shielded Gaps.
        Fiebig, R.; Rybaczok, P.
        1973
        NTIS

PEM-35
    Nuclear EMP: EMP Hardening Approach for SAM-D.
        Warner, G.L.; Doskocil, A.C.
        1973
        NTIS

RT/FI-(74)1
    Analysis and Correlation of Measurements on SNEAK and ZPR VI Fast Assemblies by the ENDF/B Version 3 Cross-Section Data File.
        Gandini, A.; Petilli, M.; Salvatores, M.
        January,1974
        NTIS

STI/PUB-343(V2), pp.3-19 (In Russian); CONF-730302(V2), pp.3-19 (In Russian); IAEA-SM-170/22 (In Russian)
    Problems of Measuring Nuclear Constants for Thermonuclear Reactors.
        Kuz'min, E.A.; Ogloblin, A.A.; Sidorov, N.I.; Faiziev, A.R.; Chulkov, L.V.; Yan'kov, G.B.
        October,1973
        IAEA

STI/PUB-343(V2), pp.21-40 (In Russian); CONF-730302(V2), pp.21-40 (In Russian); IAEA-SM-170/21 (In Russian)
    Influence of Nuclear Data on Tritium Breeding in a Thermonuclear Reactor.
        Ogloblin, A.A.; Chulkov, L.V.; Yan'kov, G.B.
        October,1973
        IAEA

STI/PUB-343(V2), pp.65-73; CONF-730302(V2), pp.65-73; IAEA-SM-170/50
    Interaction Between the National Neutron Cross Section Center, the Cross Section Evaluation Working Group, and the User Community.
        Ozer, O.
        October,1973
        IAEA

STI/PUB-343(V2), pp.75-82; CONF-730302(V2), pp.75-82; IAEA-SM-170/20
    Preliminary Comparative Analysis of American and German Nuclear Data Files for Fast-Fission-Reactor Calculations.
        Yiftah, S.; Gur, Y.; Segev, M.; Gitter, L.
        October,1973
        IAEA

STI/PUB-343(V2), pp.83-101; CONF-730302(V2), pp.83-101; IAEA-SM-170/19
    A Systematic Test of the ENDF-B/3 Evaluated Cross-Section Library on "Clean" Critical Assemblies.
        Wagschal, J.J.; Yaari, A.
        October,1973
        IAEA

STI/PUB-343(V2), pp.103-119; CONF-730302(V2), pp.103-119; IAEA-SM-170/38
    The Role of Integral Experiments in the Production of Nuclear Data for Reactor Core and Shield Design and for Irradiation Experiments.
        Farinelli, U.
        October,1973
        IAEA

STI/PUB-343(V2), pp.135-145; CONF-730302(V2), pp.135-145; IAEA-SM-170/79
    Effects of Different Nuclear Computer Codes and Data Libraries on the Evaluation of the Critical HTR-Experiment CESAR II.
        Scherer, W.
        October,1973
        IAEA

STI/PUB-343(V2), pp.193-225; CONF-730302(V2), pp.193-225; IAEA-SM-170/60
    Nuclear Data for Activation Analysis: Requirements and Present State of Compilations.
        Krivan, V.
        October,1973
        IAEA

STI/PUB-343(V2), pp.229-240; CONF-730302(V2), pp.229-240; IAEA-SM-170/36
    Nuclear Data Bases for Activation Analyses.
        Bewers, J.M.; Pearson, G.J.; Merritt, W.F.
        October,1973
        IAEA

STI/PUB-343(V2), pp.241-263; CONF-730302(V2), pp.241-263; IAEA-SM-170/31
    Resonance Integrals Applied to the Multiple-Comparator Method in Reactor Neutron Activation Analysis.
        Van Der Linden, R.; De Corte, F.; Hoste, J.
        October,1973
        IAEA

STI/PUB-343(V2), pp.265-270; CONF-730302(V2), pp.265-270; IAEA-SM-170/77
    Nuclear Data of Importance in Epithermal Neutron Activation Analysis.
        Steinnes, E.
        October,1973
        IAEA

STI/PUB-343(V2), pp.271-293; CONF-730302(V2), pp.271-293; IAEA-SM-170/73
    Nuclear Data for Neutron Metrology.
        Zijp, W.L.
        October,1973
        IAEA

STI/PUB-343(V2), pp.295-300 (In French); CONF-730302(V2), pp.295-300 (In French); IAEA-SM-170/31 (In French)
    Neutron-Flux Spatial Distribution and Nuclear Constants: Application to Activation Analysis.
        Vorsatz, B.; Zemplen-Papp, E.; Kelen, E.
        October,1973
        IAEA

STI/PUB-343(V2), pp.343-352; CONF-730302(V2), pp.343-352; IAEA-SM-170/37
Neutron-Capture Gamma-Ray Compilations.
Bartholomew, G.A.
October,1973
IAEA

STI/PUB-343(V2), pp.365-377; CONF-730302(V2), pp.365-377; IAEA-SM-170/76
The Gamma-Ray Spectrum Catalogue - A User Data File.
Heath, R.L.
October,1973
IAEA

STI/PUB-343(V2), pp.379-387; CONF-730302(V2), pp.379-387; IAEA-SM-170/44
A Compilation of Modern Nuclear-Decay Data for High-Resolution Gamma Spectroscopy.
Dyer, F.F.; Bate, L.C.
October,1973
IAEA

STI/PUB-343(V2), pp.391-410; CONF-730302(V2), pp.391-410; IAEA-SM-170/75
The Use of Nuclear Data in the Design of Radiation Instruments for Mineral Exploration and Mining.
Clayton, C.G.; Sanders, L.G.
October,1973
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STI/PUB-343(V2), pp.411-429; CONF-730302(V2), pp.411-429; IAEA-SM-170/17
Nuclear Data for Bremsstrahlung Activation Analysis of Valuable Trace Elements in the Copper Ore.
Ratynski, W.; Stegner, A.; Sujkowski, Z.
October,1973
IAEA

STI/PUB-343(V2), pp.431-435 (In Russian); CONF-730302(V2), pp.431-435 (In Russian); IAEA-SM-170/23 (In Russian)
Gamma Ray Energies and Intensities for Calibrating Ge(Li) Detectors in the Range 3-10 MeV.
Sokolovskii, L.L.; Ignatochkin, A.E.
October,1973
IAEA

STI/PUB-343(V2), pp.529-539; CONF-730302(V2), pp.529-539; IAEA-SM-170/43
Nuclear Data Compilations of Utility in Medical and Biological Applications.
Dillman, L.T.; Snyder, W.S.; Ford, M.R.
October,1973
IAEA

UCRL-51605
A Simulation Study of Plutonium Gamma Ray Groupings for Isotopic Ratio Determinations.
Gunnink, R.
June 10,1974
Dep., NTIS

UCRL-51610
Modular Fission-Fusion Hybrid Blanket.
Hansborough, L.D.; Werner, R.W.
July 1,1974
Dep., NTIS $4.00

UCRL-75200
Comparative Study of Automatic Two-Dimensional Integration Routines. 1. Measures of Comparison.
Fritsch, F.N.
November,1973
NTIS

UCRL-75304
Neutronics Analysis of a 2500 MW Thermal Fast Fission Natural Uranium Blanket for a DT Fusion Reactor.
Lee, J.D.
April,1974
NTIS

UCRL-75418
Outlook for Fusion Energy Sources: Remaining Technological Hurdles.
Post, R.F.
March 20,1974
NTIS

UCRL-75546
Tritium in Nuclear Fusion Power.
Hickman, R.G.
March 13,1974
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UCRL-75622
Heat Flux Limitations on First-Wall Shields for Early Fusion Machines.
Hoffman, M.A.; Werner, R.W.
April,1974
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UCRL-75694; CONF-740806-1
Atlas of Photoneutron Cross Sections Obtained with Monoenergetic Photons. Second Edition.
Berman, B.L. (Comp.)
May 6,1974
Dep., NTIS $9.75

UR-3490-533; CONF-740509-2
Standards for Protection of Personnel Against Non-Ionizing Radiation.
Michaelson, S.M.
1974
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