RSIC Newsletter

RADIATION SHIELDING INFORMATION CENTER

OAK RIDGE NATIONAL LABORATORY

OPERATED BY UNION CARBIDE CORPORATION FOR THE DEPARTMENT OF ENERGY

POST OFFICE BOX X • OAK RIDGE, TENNESSEE 37830

No. 159 *March 1978*

Science belongs to no one country. *. . . Louis Pasteur*

PLANS FINALIZED FOR SEMINAR-WORKSHOP ON MULTIGROUP CROSS SECTIONS

The RSIC Seminar-Workshop on Multigroup Cross Sections will be held March 14–16, 1978, in Oak Ridge, Tennessee. The Seminar (Tuesday, March 14) will feature eighteen papers presented by experts in the field. Two workshops will follow (March 15, 16) on multigroup library handling and the AMPX II code system.

Workshop I on Multigroup Handling Codes will be held on Wednesday, March 15 and will feature codes useful for deriving problem-dependent few-group libraries from fine-group libraries in both AMPX and CCCC formats. The use of these codes to manipulate data in DLC-41/VITAMIN-C (AMPX format), DLC-42/CLEAR (CCCC and AMPX formats), and the DLC-43/CSRL (AMPX format) libraries will be demonstrated.

Workshop II on AMPX-II will be held on Thursday, March 16. The operating philosophy of the AMPX modular code system will be described. The multigroup cross-section processing codes will be discussed and the resonance treatments will be reviewed. Additional modules serving useful functions will also be included in the presentations. Sample problems demonstrating the use of AMPX to generate coupled neutron and gamma-ray cross sections, perform various operations with the data, and ultimately perform a calculation in XSDRNPM will be discussed in detail. In addition, the implementation of AMPX-II as a modular code system, and the programming procedures required to efficiently utilize the system will be described.

The Seminar will include the following papers:

"Characteristics of ENDF/B-V," S. Pearlstein, National Nuclear Data Center (Brookhaven National Laboratory); "AMPX: A Modular System for Multigroup Cross-Section Generation and Manipulation," N.M. Greene, W.E. Ford, III, L.M. Petrie, B.R. Diggs, C.C. Webster, J.L. Lucius, J.E. White, R.Q. Wright, and R.M. Westfall (Oak Ridge National Laboratory); "NJOY: A Comprehensive ENDF/B Processing System," R.E. MacFarlane, R. J. Barrett, D. W. Muir, and R. M. Boicourt; (Los Alamos Scientific Laboratory); "ETOE-2/MC^2-2/SDX Multigroup Neutron Cross-Section Processing," B.J. Toppel, H. Henryson II, and C.G. Stenberg (Argonne National Laboratory); "Production of Multigroup Data at Livermore," P.C. Giles (Lawrence Livermore Laboratory); "High Speed Resonance Cross-Section Algorithms," D. Mathews (General Atomic Co.); "The Shielding Factor Method for Producing Effective Cross Sections: MINX/SPHINX and the CCCC Interface System," R.E. MacFarlane (Los Alamos Scientific Laboratory), C.R. Weisbin (Oak Ridge National Laboratory), and N.C. Paik (Westinghouse Advanced Reactor Division); "Implementation of the Rapid Cross Section Adjustment Approach at General Electric," C.L. Cowan, E. Kujawski, and R. Protsik (General Electric Co., Fast Breeder Reactor Department); "Experience in Developing and Using the DLC-41/VITAMIN-C 171-Neutron, 36-Gamma-Ray Multigroup Coupled Cross-Section Library," C.R. Weisbin, R.W. Roussin, J.E. White, R.Q. Wright, N.M. Greene, W.E. Ford,III, J.B. Wright, and B.R. Diggs (Oak Ridge National Laboratory); "Design Criteria for the 218-Group Criticality Safety Reference Library," R.M. Westfall, W.E. Ford, III, and C.C. Webster (Union Carbide Corp. Nuclear Division, Computer Sciences Division); "The MACK/MACKLIB System for Nuclear Response Functions," M.A. Abdou and Y. Gohar (Argonne National Laboratory); "Resolved Resonance Processing in the AMPX Modular Code System," R.M. Westfall (Union Carbide Corp. Nuclear Division, Computer Sciences Division); "Cross Section Probability Tables in Multigroup Transport Calculations," D.E. Cullen, E.F. Plechaty, and R.J. Doyas (Lawrence Livermore Laboratory), and C.R. Weisbin and J.E. White (Oak Ridge National Laboratory); "Analytical Inequalities Satisfied by the Cross-Section Self-Shielding Factors: Best Upper and Lower Bounds," D.G. Cacuci (Oak Ridge National Laboratory); "Comparison of the CTR Fine-Group Cross-Section Library for Iron with Multigroup Cross Sections Generated by the VIM Monte Carlo Code," N. Hertel and B. Wehring (University of Illinois), and R.H. Johnson (Purdue University); "Experience with the DLC-37/EPR Cross-Section Library for Preliminary Gamma-Ray Heating Analysis of the Purdue University Fast

Breeder Blanket Facility," R.H. Johnson and J.H. Paczolt (Purdue University); "An Analytic Angular Integration Technique for Generating Multigroup Transfer Matrices," J.A. Bucholz (Oak Ridge National Laboratory); and "Code Implementation of Partial-Range Angular Scattering Cross Sections: GAMMAR and MORSE," J.T. Ward, Jr. (University of Virginia).

AUGUST DATE SET FOR SENSITIVITY SEMINAR-WORKSHOP

On August 22–24, 1978, an RSIC Seminar-Workshop on Sensitivity and Uncertainty Methodology will be held in Oak Ridge, Tennessee. Under the technical leadership of C. R. Weisbin, an attempt will be made to assess the state of the art in the seminar portion and publish the proceedings. The specific coverage of the subject area and the format of the workshop has not yet been determined. Plans will be announced as they are formulated.

The *RSIC Newsletter* query (August 1977 Issue) elicited a variety of responses concerning coverage of the subject area. In general, they suggested a comprehensive coverage of the theory so as to provide a useful introduction to newcomers to the field, assess the state of the art, provide a forum for clarification of unsettled questions, and an indication of future trends. The LASL ALVIN and the ORNL FORSS code systems were suggested for workshop coverage.

RSIC continues to welcome your comments, suggestions, and your questions. All correspondence should be addressed to: RSIC Seminar-Workshop Coordinator, Bldg. 6025 – ORNL, P. O. Box X, Oak Ridge, Tennessee 37830.

ADDITIONAL SEMINAR-WORKSHOP REQUESTS

Several subjects for future RSIC seminar-workshop coverage have been suggested by members of the RSIC user community. These include: a comprehensive coverage of DOT IV (discrete ordinates), Shielding Calculation Result Analysis, System Reliability Analysis, and Radionuclide Dosage Calculations Around a Nuclear Power Plant.

We will be pleased to receive your comments on these proposals and your suggestions for coverage of your particular needs. Address your comments and suggestions to the RSIC Seminar-Workshop Coordinator, Bldg. 6025 – ORNL, P. O. Box X, Oak Ridge, Tennessee 37830.

RPI OFFERS SUMMER PROGRAMS IN NUCLEAR REACTOR DESIGN AND BASIC NUCLEAR TECHNOLOGY

A comprehensive program in Nuclear Reactor Design and related areas will be offered at Rensselaer Polytechnic Institute during the summer of 1978. The program is intended primarily for nuclear industry and utility power company engineers and managerial and technical staff personnel as well as educators desiring a review of the background material and the methods and procedures involved in the analysis and design of current nuclear power reactor systems. It will also be useful to the practicing engineer interested in improving his background in nuclear technology, reactor design or computer applications. A number of important topics in reactor engineering and design will be covered in depth, starting from the fundamentals of nuclear reactor technology to the state-of-art techniques and methods used in the integrated design analysis and evaluation of nuclear power plants, including computational approaches and methods, safety and fuel management. Computer programs and reactor design code packages typical of those in current use in the nuclear industry will be discussed, and their operation demonstrated on the IBM 360/67 computer at RPI.

The overall program will comprise three separate, self-contained one-week course modules, organized and structured in a manner so as to permit adequate flexibility and optimum usefulness. Any one course module can be taken separately and independently—or all three sequentially. The program will be patterned as much as possible, to meet the professional needs of the participants; prior to the course, attempts will be made to identify specific areas of interest of individual participants—through feedback from individuals and companies. Thus early pre-registration would be helpful in planning the detailed content and scope of the program.

No special preparation in nuclear science is required for the course, although it would be helpful for the participants to have enough background in other technical areas to be able to follow the lectures in these courses.

The first week (July 10–14) will cover **Basic Nuclear Reactor Technology:** Reactor Physics & Engineering

Fundamentals; Nuclear Power Systems; Reactor Types; Nuclear Energy Conversion and Heat Transport; Systems Analysis of Nuclear Power Plants; Safety and Health Physics; Licensing; Use and Operation of the Rensselaer Reactor; and Miscellaneous Topics. The second week (July 17–21), **Nuclear Reactor Design,** will feature Design Considerations: Approaches and Methods; Nuclear Design; Thermal-Hydraulic Design; LWR Safety and Related Design Requirements; Nuclear Power Quality Assurance; Fuel Management; Nuclear Power; and Electric Utility Economics. During the third week (July 24–28), **Computer Applications and Reactor Design Codes** will be covered: Fundamentals of Computing and Numerical Methods for Nuclear Engineering Applications; Programming Reactor Problems for Digital Computers; Computer Programs – Reactor Statics, Thermal Hydraulics, Fuel Management, Reactor System Dynamics, Shielding, etc.; Information Flow Among Computer Programs; Operation and Use of Typical Reactor Design Codes – Sample Problems; Applications of Reactor Calculations to Reload Licensing; and Miscellaneous Topics.

The course fee is $425 per week or $1200 for the whole three-week program. Summaries of lectures, reference materials, supporting literature, calculation aids, computer code material and other relevant material will be distributed to the course participants at no additional cost. Registration forms can be obtained from the Office of Continuing Studies, Rensselaer Polytechnic Institute, Troy, New York 12181.

NEA CPL PUBLISHES THIRD BULLETIN ON COMPUTER CODE UTILIZATION EXPERIENCE

The OECD Nuclear Energy Agency Computer Programme Library has published Bulletin No. 3 on *Service on Experience of Code Utilization* as Newsletter No. 22 (December 1977). The contents of the report are as follows:

DOT 3.5 CONVERGENCE STUDY (B. McGregor, A.A.E.C. Lucas Heights, Australia); BENCHMARK TEST CALCULATIONS WITH TWO-DIMENSIONAL (r,z) RADIATION TRANSPORT CODES (T. Asaoka, S. Miyasaka, T. Fujimura & T. Tsutsui, Japan Atomic Energy Research Institute, Tokai, Japan); IMPLEMENTATION OF EXPONENTIAL SUPPLEMENTARY EQUATIONS ON DOT-III and DOT 3.5 CODES (P. Barbucci & F. Di Pasquantonio, ENEL, Milan, Italy); RADHEAT-V3: A CODE SYSTEM FOR ANALYSING THE RADIATION TRANSPORT IN NUCLEAR REACTORS (K. Koyama, Y. Taji, K. Minami, S. Miyasaka & T. Asaoka, Japan Atomic Energy Research Institute, Tokai, Japan); IMPLEMENTATION OF EXPONENTIAL SUPPLEMENTARY EQUATIONS ON THE ANISN CODE (P. Barbucci & F. Di Pasquantonio, ENEL, Milan, Italy); THE GGTC-ENEL, A NEW VERSION OF GGC CODE INCLUDING AN IMPROVED INTERMEDIATE RESONANCE METHOD AND A MODIFIED THERMOS CODE (O. Chiovato – ARS, Milan, Italy; F. Di Pasquantonio– Ente Nazionale per l'Energia Elettrica, Milan, Italy); PRODUCTION OF MULTIGROUP CROSS SECTION SETS FROM GGC-3 DATA LIBRARY (H. J. Boado, C. J. Cho & M. J. Abbate, Comision Nacional de Energia Atomica, Centro Atomico Bariloche, Argentina); COMPARISON BETWEEN THE DIFFUSION CODES TRITON, SQUID, WHIRLAWAY AND THE PDQ07-VERSION AS USED BY BBR (W. M. Rommelaire, Babcock-Brown Boveri-Reaktor GmbH, Mannheim, Germany); HRMC/DIFF-H: A TWO-DIMENSIONAL (r,z) FINITE DIFFERENCE DIFFUSION CODE WITH TRANSPORT THEORETICAL TREATMENT OF A ROTATIONAL CYLINDRICAL CAVITY (W. Bernatt, Institut fuer Kernenergetik und Energiesysteme der Universitaet, Stuttgart, Germany); and PERFORMANCE OF THE COMPUTER PROGRAMS DEPCO-MULTI, ALARM-BI, HYDY AND SCORCH-B2 FOR LWR-ECCS EVALUATION (K. Sato, et al., Japan Atomic Energy Research Institute, Tokai, Japan);

Copies of the report may be requested from the OECD Nuclear Energy Agency's Computer Program Library, C.P. No. 15, 121027 Ispra (Varese), Italy.

LSU NUCLEAR SCIENCE CENTER COURSE

The LSU Nuclear Science Center will offer a five-day course in basic health physics in Baton Rouge beginning on May 8, 1978. The objective is to present the basic principles of health physics to engineers, scientists, managers, and other technical personnel. An educational background equivalent to a BS degree in science or engineering or a high school diploma and several years' experience in a technical area should be sufficient. The use of advanced mathematics will be minimized since the emphasis will be on solutions to practical problems. A registration fee of $325 includes all the required notes and materials.

Additional information may be obtained by contacting Dr. R. C. McIlhenny, or Dr. W. F. Curry at (504) 388-2163 or FTS 688-2163. Please write or telephone as soon as possible if you would like to attend.

UPCOMING CONFERENCE

The **International Conference on Nuetron Physics and Nuclear Data for Reactors and Other Applied Purposes** will be held in Harwell, England, September 25–29, 1978, under the auspices of the OECD Nuclear Energy Agency and the United Kingdom Atomic Energy Authority with the cooperation of the International Atomic Energy Agency and the support of the Commission of European Communities Joint Research Centre Central Bureau for Nuclear Measurements. The aim of the Conference is to bring together scientists who are interested in the use, measurement, calculation and evaluation of neutron and nuclear data for applied purposes. The main emphasis will be on the data needed in the fission reactor program (the design, operation, safety and shielding of fission reactors, the processing of fuel and the storage or disposal of nuclear waste), but a large fraction of the time will be devoted to the data related to fusion reactors, to biomedical needs, and to other applied purposes. The Conference will be held at the Cockcroft Hall, Atomic Energy Research Establishment, Harwell, England with accommodation at St. Catherine's College, Oxford.

The working languages of the Conference will be English and French. There will be about 30 invited speakers and time for about 50 contributed papers. The invited speakers include *J. Y. Barré, V. Benzi, J. Butler, H. Condé, W. G. Cross, H. O. Denschlag, F. H. Fröhner, K. Fuketa, B. W. Hooton, A. S. Jensen, F. Käppeler, G. A. Keyworth, H. Küsters, J. Lachkar, J. E. Lynn, A. K. McCracken, F. G. Perey, S. M. Qaim, J. L. Rowlands, S. Salvy, D. Seeliger, G. Stöcklin, and H. Weigmann.*

The Conference is open to all those with a special interest in Nuclear Physics and Nuclear Data who are working in OECD or IAEA Member Countries. For reasons of space, participants will be limited to about 200. Those interested in attending should write for further details to their OECD National Delegation, to the IAEA, or directly to the Scientific or Administrative Secretaries of the Conference. The Conference Chairman is Dr. B. Rose; the Conference Deputy Chairman is Dr. J. E. Lynn. Scientific Secretary is Dr. G. D. James, Nuclear Physics Division 7.21, AERE Harwell, Didcot, Oxfordshire, England OX11 ORA; and the Administrative Secretary is Mme. M. Faure, Secretariat of the CNPND, c/o OECD Nuclear Energy Agency, 38 Boulevard Suchet, F-75016 Paris, France.

IAEA INIS PUBLICATIONS AVAILABLE

Several publications of the International Atomic Energy Agency's (IAEA) International Nuclear Information System (INIS) are available from UNIPUB, Box 433, Murray Hill Station, NY, NY 10016, including *INIS Atomindex* and the *INIS Reference Series*.

INIS Atomindex is the world's only international nuclear science abstracting service. It is a computer-produced bibliography and index of nuclear science publications, issued 24 times a year, with cumulative indexes published twice a year. Annually, more than 70,000 books, research reports, journal articles, conference papers, patents, etc., are added to the INIS system and listed in *INIS Atomindex*. Each issue contains complete bibliographic citations, sets of subject descriptors, and, in most cases, abstracts of contents for all publications recently added to the INIS system. The references in each issue are grouped under about 115 subject headings within six broad subject categories: physical sciences; chemistry, materials, and earth sciences; life sciences; isotopes and isotope and radiation applications; engineering and technology; and other aspects of nuclear energy–economics, law, documentation, etc. *INIS Atomindex* also includes indexes of personal authors; corporate authors; subjects; conference titles; and report, standard, and patent numbers. These indexes are cumulated and published separately twice a year. The *INIS Atomindex* 1978 subscription rate is as follows: Issues 1–24 only: $110.00; Cumulative Indexes only: $40.00; Issues 1–24 and Cumulative Indexes: $150.00.

The *INIS Reference Series* is a set of 16 manuals and reports comprising all of the rules, standards, guidelines, formats, codes, authority lists, etc., which are necessary to prepare accurate and consistent records for use in INIS. The *INIS Reference Series*, designed specifically to aid in the preparation and use of records in the INIS information system, has wider applications for information scientists, librarians, nuclear

scientists and others in the field. The 16 volumes of the series are regularly revised to ensure their timeliness, accuracy, and compatibility for use in the storage and retrieval of information in the INIS system.

One of the most useful volumes in the *INIS Reference Series* is the *INIS Thesaurus* which contains a controlled vocabulary for the subject indexing of nuclear science and technology literature. The domain of knowledge covered by the *INIS Thesaurus* comprises not only nuclear physics and reactor technology, but also such related topics as general physics, astrophysics, isotope technology, fabrication and use of nuclear materials and instruments, radiochemistry, radiobiology, and the legal and regulatory aspects of the management and control of nuclear energy. Revised twice a year, the *Thesaurus* currently contains 15,025 accepted terms and 4404 forbidden terms, arranged in a single alphabetical list. The most recent revision of the *Thesaurus*, published in July 1977, is now available from UNIPUB for $24.

INIS is a cooperative, decentralized information system set up by the IAEA and its Member States to identify and record publications worldwide on nuclear science and its peaceful applications. Maintenance of the INIS master file of records requires input from numerous national and regional information centers on recent publications in the field of nuclear science and technology. In January 1978 the total number of items in the INIS system will reach 350,000.

RSIC GRAB BAG

We offer extra copies of the following document on a first-come, first-served basis. We will honor requests until the supply is exhausted. If you want to add to your reference shelf, please order by title.

Abstracts of Papers Presented at the 5th International Conference on Reactor Shielding (RSIC Informal Report).

CHANGES IN THE COMPUTER CODE COLLECTION

The following changes were made in the collection during February.

CCC-112/SAND II

The contribution of a new CDC 7600 version (CCC-112A) of the code system for neutron flux determination by multiple foil activation (iterative method) by C-E Power Systems, Windsor, Conn. has resulted in a complete review of the code package. The UNIVAC 1108 version (old A), packaged in 1969, the IBM 7044/7094 version (D) of 1971, and the CDC 6600 version (C) packaged in 1974 have been removed from the package as obsolete. The package now contains the new CDC version (CCC-112A) and the currently maintained IBM 360 version (CCC-112B) which differ only by hardware on which each has been implemented, giving identical results to sample problems. A listing of the changes made by C-E Power Systems to the old CDC version to bring it up to the IBM-maintained version are available in RSIC. One reel of tape is required for transmittal of A or B versions of CCC-112/SAND II.

CCC-217/ORIGEN

This isotope generation and depletion (matrix exponential method) code package was updated to correct an error in the light element data library (File 1 of the RSIC master tape) and a minor error in File 2, the nuclide library of actinides and decay products. The half life of Nb^{94} in the nuclide library of structural materials and light elements was given as 20-million years rather than the true half life of 20,000 years. The error does not occur in the larger light element library in the package. The error in the actinides and decay products library was an incorrect exponential in only one instance. These errors were called to RSIC attention by Edward Merrill of Battelle Pacific Northwest Laboratories and Charles W. Kee of ORNL. While the difference (Nb^{94} error) might go unnoticed in most other studies, the correction was significant in Mr. Merrill's decommissioning studies. Current ORIGEN users may request Files 1 – 2 of the CCC-217A

master tape as a replacement for the incorrect data libraries they received prior to this update. A reel of magnetic tape will be required for transmission of the data.

CCC-277/MORSE-SGC

The code package was updated to correct an error in subroutine XSEC4 of the MORSE-SGC source program called to RSIC attention by the ORNL developers. Two cards were reversed (identified as 46 and 47). The order should read, first statement: [L=(J-1)*(3+2*NPL)] followed by the statement, [IF (NNGA.LE.0) GO TO 702].

MORSE-SGC is a super-grouped cross-section version of the general purpose Monte Carlo multigroup neutron and gamma-ray transport code system which includes both a KENO geometry package and an improved combinatorial geometry package. The code system is designed to reduce computer core size requirements to solve problems with large cross-section storage requirements. Reference: ORNL/CSD-7. FORTRAN IV; IBM 360.

CCC-300/RADHEAT-V3

The modular code system package for calculation of neutron and gamma-ray transport in a nuclear reactor or shield, contributed by the Japan Atomic Energy Research Institute, has been updated to include the FACOM 230-75 hardware version (B). CCC-300A was converted to IBM-370 and sent to RSIC by the OECD Nuclear Energy Agency's Computer Programme Library. The RADHEAT-V3 system includes SUPERTOG-JR, GAMLEG-JR, MACS, ANISN-JR, TAPEMAKER, a Plotting Routine, and input and output of sample problems. The system produces multigroup cross sections needed for transport, heat generation, and radiation damage in reactor and shield.

PSR-111/APPLE

The plotting code package to display spatial distributions of the reaction rates and neutron energy spectra of the multigroup flux obtained from ANISN was extended to include an IBM 370 version converted from the FACOM 230-75 and tested by the OECD Nuclear Energy Agency's Computer Programme Library, Ispra (Varese), Italy. APPLE was developed by the Thermonuclear Fusion Research Division of the Japan Atomic Energy Research Institute (JAERI) and Century Research Center, Tokyo, Japan. Reference: JAERI-memo 7194 (July 1977). FORTRAN IV; FACOM 230-75 (PSR-111A) and IBM 370 (PSR-111B). A reel of magnetic tape is required for transmittal.

PSR-112/MAME

Three modules were added to this collection of AMPX-I modules (See January 1978 RSIC Newsletter). These newer IBM versions of AIM, MALOCS, and BONAMI will convert collapsed AMPX libraries from BCD to binary, will properly collapse gamma-ray multiplicities, and will self-shield the higher order transfer matrices, respectively. Existing versions of these modules in PSR-112 do not have these revisions. Both PSR-112A (CDC) and -112B (UNIVAC) versions have been updated. Contributed by Neutron Physics Division, Oak Ridge National Laboratory.

CHANGES TO THE DATA LIBRARY COLLECTION

DLC-41B/VITAMIN-C

The 25-nuclide BCD neutron data tape in AMPX format has been replaced by one with reordered Bondarenko factors. The current 25-nuclide tape (November 1977) could not be properly self-shielded with BONAMI because of this problem. In order to update your package, send a tape requesting the 25-nuclide neutron data (February 1978 version) from DLC-41B.

VISITORS TO RSIC

The following persons came for an orientation visit and/or to use RSIC facilities during the month of February:

Keith Eckerman, NRC, Washington, D.C.; Georges Minsart, Centre d'Etude del Energie Nucleaire (CEN/SCK), Mol, Belgium; Michael C. Stauber, Grumman Aerospace Corporation, Bethpage, NY; and Frank Sweeney, Instrumentation and Controls Division, ORNL, Oak Ridge, TN.

FEBRUARY 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.

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

AFTAC-TR-78-1

Studies in Application of Discrete Ordinates Transport Methods to Light Transport Calculations: Preparation of Mie Theory Cross Sections in Legendre Polynomials.

Lindstrom, D.

September 1977

Radiation Research Associates, Inc.

CONF-770401

Proceedings of the Fifth International Conference on Reactor Shielding.

Roussin, R.W.; Abbott, L.S.; Bartine, D.E. (Eds.)

December 1977

Science Press, 8 Brockstone Dr., Princeton, NJ 08540

CONF-770401, pp.1-10; Atomkernenergie, 30(4), 229-233(1977)

Where Are We and Where Are We Going in Reactor Shielding?

Maienschein, F.C.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

Oak Ridge National Laboratory, USA

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.11-21; Atomkernenergie, 30(4), 233-237(1977)

The Evolution of Shielding Methods and Data—A Continuing Process of Adjustment to Changing Project Needs.

Butler, J.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

AEE Winfrith, UK

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.22-34; Atomkernenergie, 30(4), 238-243(1977)

Shielding Methods Development in the United States.

Mynatt, F.R.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

Oak Ridge National Laboratory, USA

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.35-43

Design of FFTF Shields.

Bunch, W.L.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

Hanford Engineering Development Laboratory, USA

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.44-53
A Summary of the ORNL Shield Design Supporting Analysis for the FFTF.
Engle, W.W.,Jr.; Mynatt, F.R.; Emmett, M.B.; Williams, M.L.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.54-63; Atomkernenergie, 30(4), 244-248(1977)
Shielding Design Features of the Floating Nuclear Plant.
Billings; M.P.; Capo, M.A.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Offshore Power Systems, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.64-74
Shield Design for the Joint European TORUS.
Avery, A.F.; Chestnutt, M.M.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
AEE Winfrith, UK
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.75-90; Atomkernenergie, 30(4), 249-255(1977)
A Survey of Cross-Section Sensitivity Analysis as Applied to Radiation Shielding.
Goldstein, H.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Columbia University, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.91-100
A Computational Scheme for Energy Group Boundary Selection Using Sensitivity Theory.
Herrnberger, V.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Swiss Federal Institute for Reactor Research, Switzerland
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.101-111
Sensitivity Profiles for Secondary Energy and Angular Distributions.
Gerstl, S.A.W.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Los Alamos Scientific Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.112-119
Three-Dimensional Effects in Sensitivity Studies.
Rief, H.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
EURATOM-Ispra
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.120-131
A Review of Progress in the NEA/IAEA Collaborative Program of Sensitivity Studies and Shielding Benchmarks.
Butler, J.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
AEE Winfrith, UK
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.132-139
Spatio-Energetic Sensitivity of the Equivalent Thermal Flux on the Intermediate Heat Exchanger of a Typical Fast Breeder Reactor.
Boioli, A.; Fiorini, L.; Moreau, J.; Suntinger, G.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
NIRA, Italy; CEA CEN/Cadarache, France
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.140-148
Fast Reactor Shield Sensitivity Studies for Steel-Sodium-Iron Systems.
Oblow, E.M.; Weisbin, C.R.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.149-156
The Effects of Square-Well Cross Section Minima on the Deep Penetration of Neutrons.
Peng, W.; Goldstein, H.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Columbia University, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.157-168; Atomkernenergie, 30(4), 256-260(1977)
Radiation Protection/Shield Design: A Need for a Systems Approach.
Disney, R.K.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Westinghouse Advanced Reactor Division, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.169-178; Atomkernenergie, 30(4), 261-264(1977)
Radiation Streaming—The Continuing Problem of Shield Design.
Avery, A.F.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
AEE Winfrith, UK
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.179-187; Atomkernenergie, 30(4), 265-268
Radiation Streaming of N.S. Mutsu and Its Repair Plan.
Osanai, M.; Miyakoshi, J.; Tsubosaka, A.; Miyasaka, S.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Nuclear Ship Development Agency, Japan; JAERI
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.188-196; Atomkernenergie, 30(4), 269-274
Mockup Experiment and Analysis for the Primary Shield of the Nuclear Ship Mutsu.
Miyasaka, S.; Asaoka, T.; Taji, Y.; Ise, T.; Koyama, K.; Tsutsui, T.; Takeushi, M.; Fuse, T.; Miura, T.; Yamaji, Y.; Miyakoshi, J.; Tubosaka, T.; Furuta, K.; Kawakita, T.; Natume, H.; Nishizaki, T.; Okumura, Y.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
JAERI; Ship Research Institute; Nuclear Ship Development Agency, Japan
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.197-204
Fort St. Vrain Plant Shielding Design and Measurements.
Su, S.; Engholm, B.A.; Sund, R.E.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
General Atomic Co., USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.205-213
Neutrons and Gamma-Ray Streaming in the Annulus Between the Reactor Pressure Vessel and the Sacrificial Shield of the Caorso Nuclear Power Station.
Barbucci, P.; Di Pasquantonio, F.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
ENEL-Ente Nazionale per l'Energia Elettrica, Italy
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.214-222
Empirical Solution of Radiation Streaming Problems in the Air Gap Around the Pressure Vessel of a PWR.
Francis, C.C.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Tennessee Valley Authority, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.223-229; Atomkernenergie, 30(4), 275-277(1977)
Shielding Against Neutron Streaming in Pressurized Water Reactors.
Devillers, C.; Payen, J.P.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
CEA, Saclay, France; EDF, France
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.230-237; Atomkernenergie, 30(4), 278-281

Irradiation Effects and Design of LMFBR Permanent Reactor Structures.

Blackburn, L.D.; Knecht, R.L.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

Hanford Engineering Development Laboratory, USA

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.238-245

Determination of Radiation Damage to Structural Components Outside the Core of PWRs.

Koban, J.; Leitz, G.; Hehn, G.; Issler, L.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

Kraftwerk Union; IKE, Stuttgart; MPA, Stuttgart, FR Germany

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.246-252

Neutron Transport Through Straight and Once Bent Sodium Pipe in Shielding of Fast Reactors.

Burian, J.; Jansky, B.; Osmera, B.; Otopal, P.; Rataj, J.; Petrov, E.; Trykov, L.; Nikolajev, A.; Semenov, V.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

Nuclear Research Institute, Rez, Czech.; FEI Obninsk, USSR

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.253-261

Calculation of Duct and Annular Gap Problems With ESTOQ-DOT and Analytical Expressions.

Zumach, W.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

IKE, Stuttgart, FR Germany

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.262-270

Neutron and Gamma-Ray Transport Studies in the Helium Ducts and Turbogroups of a High Temperature Reactor with Helium Turbine (HHT) Using the Monte Carlo Method.

Taormina, A.; Kypreos, S.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

EIR, Switzerland

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.271-279

A Study of Fast Neutron Streaming Through the Core Support-Plant Shield of a LMFBR.

Suzuki, I.; Inous, T.; Oka, Y.; Wakabayashi, H.; An, S.; Sasaki, K.; Miyasaka, S.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

Power Reactor and Nuclear Fuel Development Corp.; Univ. of Tokyo; Mitsubishi Atomic Power Industries; JAERI

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.280-287

Neutron Dosage at Steel Components in the THTR.

Wahsweiler, H.G.; Hehn, G.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

Hochtemperatur-Reaktorbau GmbH, Koln; IKE Stuttgart, FR Germany

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.288-299; Atomkernenergie, 30(4), 282-286(1977)

Radiation Exposure and Protection Problems in Nuclear Power Plants—U.S. Overview.

Verna, B.J.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

Nuclear Power Experience Inc., USA

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.300-308; Atomkernenergie, 30(4), 287-289(1977)

Design Measures to Minimize Radiation Exposure of Staff for a Commercial Nuclear Power Plant.

Keenan, F.; Pugh, I.G.; Youell, F.P.

Dec. 1977

Science Press, 8 Brookstone Dr., Princeton, NJ 08540

South of Scotland Electricity Board; Central Electricity Generating Board; Nuclear Power Company (Risley) Ltd., UK

In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.309-316
Design Worth of Radiation Exposure Reduction.
Collins, R.; James, R.A.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Atomic Energy of Canada Limited; Ontario Hydro, Canada
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.317-324
Radiation Exposure in the Operating PWR Plants and Specific Design Features for Occupational Dose Reduction.
Mani, V.; Lingappan, K.G.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
United Engineers and Constructors, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.325-332; Atomkernenergie, 30(4), 290-292(1977)
Experience with Occupational Radiation Exposure in PWRs Built by Kraftwerk Union.
Hecht, G.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Kraftwerk Union, FR Germany
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.333-341
Radiological Experience in Swedish Boiling Water Reactors.
Elkert, J.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
AB Asea-Atom, Sweden
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.342-352
Measurement and Prediction of Gamma-Ray Sources and Dose Rates in the Vicinity of the Winfrith SGHWR.
Miller, P.C.; Avery, A.F.; Carter, M.D.; Chestnutt, M.M.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
AEE Winfrith, UK
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.353-363
Radiation Safety of Nuclear Power Plants with Large Channel-Type Reactors.
Egorov, Yu.A.; Polushkin, K.K.; Sklyarov, V.P.; Cerkaskov, Yu.M.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
USSR
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.364-373; Atomkernenergie, 30(4), 293-296(1977)
An Overview of the Activated Corrosion Product Reduction Program at U.S. Power Reactors.
Murphy, T.D.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Nuclear Regulatory Commission, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.374-391; Atomkernenergie, 30(4), 297-302(1977)
Prediction of Primary Circuit Contamination in Power Reactors.
Beslu, P.; Costa, L.; Frejaville, G.; Pepin, P.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
CEA, France
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.392-400
EPRI Programs in Power Reactor Radiation Control.
Shaw, R.A.; Uhl, D.L.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Electric Power Research Institute, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.401-408
The Contribution of Fission Products to Radiation Fields in a Pressurized Heavy Water Reactor.
Neil, B.C.J.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Ontario Hydro, Canada
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.409-415
Analysis of Dose Rates Near the Circuit of a PWR After Shutdown.
Beslu, P.; Frejaville, G.; Lalet, A.; Devillers, C.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
CEA, France
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.416-424
Prediction of Fission Product and Actinide Levels in Irradiated Fuel and Cladding.
Burstall, R.F.; Thornton, D.E.J.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
UK Atomic Energy Authority, Risley, UK
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.425-433
Criteria for Uses of Built-In Exposure Rate and Airborne Radio-activity Monitoring Systems in Nuclear Power Plants.
Todd, T.E.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Tennessee Valley Authority, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.434-441
Digital Radiation Monitoring System Employing Distributed Microprocessors.
Warman, E.A.; Ingeneri, S.M.; Newman, B.M.; Sowdon, T.L.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Stone and Webster, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.442-447; Atomkernenenergie, 30(4), 303-304(1977)
RSIC After 14 Years–Where Do We Go From Here?
Trubey, D.K.; Maskewitz, B.F.; Roussin, R.W.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.448-456
Radiation Protection and Shielding Standards.
Vallario, E.J.; Trubey, D.K.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Energy Research and Development Adminstration; Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.457-462
Shielding Standards–A Case History.
Battat, M.E.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Los Alamos Scientific Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.463-471
Activities of the Shielding Subcommittee of the ENDF/B Cross Section Evaluation Working Group.
Roussin, R.W.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.472-481
The Role of "Standard" Fine-Group Cross Section Libraries in Shielding Analysis.
Weisbin, C.R.; Roussin, R.W.; Oblow, E.M.; Cullen, D.E.; White, J.E.; Wright, R.Q.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.482-493
Generation and Testing of Shielding Data Libraries for Fission and Fusion Technology.
Caglioti, E.; Mattes, M.; Nicks, R.; Penkuhn, H.; Hehn, G.; Herrnberger, V.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
EURATOM–Ispra; IKE Stuttgart, FR Germany; Swiss Federal Institute for Reactor Research, Switzerland
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.494-500; Atomkernenergie, 30(4), 305-307(1977)
BN-350 Reactor Shielding Studies.
Bakumenko, O.D.; Zvonarev, A.V.; Kulakovsky, M.Ja.; Koleganov, Ju.F.; Pomerantsev, G.V.; Sergeev, V.A.; Tverdovsky, N.D.; Savitsky, V.I.; Tsurukin, Ju.P.; Usanov, V.I.
Dec. 1977
Science Press, 8 Brockstone Dr., Princeton, NJ 08540
USSR
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.501-511; Atomkernenergie, 30(4), 308-312(1977)
Important Aspects of Radiation Shielding for Fusion Reactor Tokamaks.
Abdou, M.A.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Argonne National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.512-519
Shielding Problems in the "FINTOR" Design.
Nicks, R.; Ponti, C.; Realini, G.; Van Heusden, H.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
EURATOM-Ispra
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.520-526
Shield Analyses for Intense 2.2pJ(14-MeV) Neutron Sources.
Battat, M.E.; Dudziak, D.J.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Los Alamos Scientific Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.527-535
Monte Carlo Analysis of the Effects of Penetrations on the Performance of a Tokamak Fusion Reactor.
Santoro, R.T.; Tang, J.S.; Alsmiller, R.G.,Jr.; Barnes, J.M.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.536-544
Radiological Safety Design Considerations for a Laser-Fusion Facility.
Singh, M.S.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Lawrence Livermore Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.545-553
The Methods of Calculation Used in the Design of Shielding Within the Primary Containment of a Commercial SGHWR.
Dutton, L.M.C.; Solari, P.A.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Nuclear Power Company (Risley) Ltd., UK
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.554-562
Shield Design and Streaming Calculations for the Sodium-Cooled PEC Reactor.
Prosperi, M.; Tavoni, R.; Travaglini, N.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
AGIP NUCLEAR; CNEN, Italy
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.563-569
Shield Design of a 100 MW(th) Research Reactor
Chamany, B.F.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Bhabha Atomic Research Centre, India
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.570-579
Application of an Advanced Shielding Analysis System to Gas Cooled Fast Reactor Designs.
Bartine, D.E.; Williams, L.R.; Slater, C.O.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.580-589
Simultaneous Global Calculation of Flux and Importance with Forward Monte Carlo.
Deutsch, O.L.; Carter, L.L.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Massachusetts Institute of Tech.; Los Alamos Scientific Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.590-597
The Monte Carlo Track Rotation Estimator.
Dubi, A.; Horowitz, Y.S.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Ben Gurion University of the Negev, Israel
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.598-604
Direction Dependent Exponential Biasing in Monte Carlo Simulation of Radiation Transport in Thick Shields.
Murthy, K.P.N.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Reactor Research Centre, India
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.605-612
Methods of Monte Carlo Biasing Using Two-Dimensional Discrete Ordinates Adjoint Flux.
Tang, J.S.; Hoffman, T.J.; Stevens, P.N.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Union Carbide Corp./Nuclear Division; Univ. of Tennessee, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.613-621
A Partial-Range Expansion for Multigroup Monte Carlo Photon Transport.
Ward, J.T.,Jr.; Scudiere, M.B.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Univ. of Virginia, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.622-627
Calculation of Toroidal Fusion Reactor Blankets by Monte Carlo.
Macdonald, J.L.; Cashwell, E.D.; Everett, C.J.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Los Alamos Scientific Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.628-635
A Neutron/Photon/Electron Shielding Study for a Laser-Fusion Facility.
Thompson, W.L.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Los Alamos Scientific Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.636-644
A Study of Applicability of an Albedo Monte Carlo Method for Neutron Streaming Calculation.
Kawai, M.; Yamauchi, M.; Kadotani, H.; Suzuki, I.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Nippon Atomic Industry Group Co.; Century Research Center Corp.; Power Reactor and Nuclear Fuel Development Corp., Japan
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.645-651
Neutron Streaming Through Conical Ducts.
de Beer, G.P.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Atomic Energy Board, South Africa
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.652-659
Evaluation of Uncertainties in the Gamma-Ray Heating Analysis of a PWR.
West, J.T.,III
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Union Carbide Corp./Nuclear Division, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.660-667
An Examination of Neutron Shielding for a Spent Fuel Shipping Cask.
Ueki, K.; Yamakoshi, H.; Takeuchi, K.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Ship Research Institute, Japan
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.668-679
Theory and Use of Maniscalco Two-Medium Buildup Factors.
Hungerford, H.E.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Purdue University, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.680-687
Development of a Computer Code for Neutron Streaming Calculations in LMFBR.
Nishimura, T.; Kinjo, H.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Mitsubishi Atomic Power Industries, Japan
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.688-693
A Simple Albedo Method for Calculating Effects of Single-Legged Ducts.
Celnik, J.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Burns and Roe, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.694-702
The Optimisation of Shielding for Direct-Cycle Steam Turbine Plant.
Martin, A.; Firmin, G.H.; Eaton, J.R.P.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Associated Nuclear Services; South of Scotland Electricity Board, UK
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.703-710
The Use of Removal Diffusion Theory for Calculating the Effectiveness of Neutron and Gamma-Ray Shields for Nuclear Reactors and Chemical Plants.
Richardson, B.L.; Burstall, R.F.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
UK Atomic Energy Authority, Risley, UK
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.711-718
Exponential Supplementary Equations for SN Methods: The Two-Dimensional Case.
Barbucci, P.; Di Pasquantonio, F.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
ENEL-Ente Nazionale per l'Energia Elettrica, Italy
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.719-723
Application of the ONETRAN and TIMEX Codes to Shielding Problems.
Hill, T.R.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Los Alamos Scientific Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.724-730
The DOT IV Variable Mesh Discrete Ordinates Transport Code.
Rhoades, W.A.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.731-738
Optimal Iron-Water Shields for Fusion Reactors.
Gilai, D.; Greenspan, E.; Levine, P.; Price, W.G.,Jr.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Nuclear Research Center–Negev, Ben Gurion University, Israel; Princeton University, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.739-745
A Three-Dimensional Synthesis Approach to Reactor Internal Gamma-Ray Heating.
West, J.T.,III; Whitmarsh, C.L.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Union Carbide Corp./Nuclear Division; Babcock and Wilcox, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.746-753; Atomkernenergie, 30(4), 313-316(1977)
The Direct-Coupled-Ray Method for Three-Dimensional Shielding Analysis.
Bucholz, J.A.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Union Carbide Corp./Nuclear Division, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.754-761
A Coarse-Mesh Algorithm to Solve the Neutron Transport Equation in Thick Shields.
Vaidyanathan, R.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Reactor Research Centre, India
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.762-769
The Background Cross Section Approach to Generating Group Constants for Shielding Calculations.
MacFarlane, R.E.; Kidman, R.B.; Becker, M.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Los Alamos Scientific Laboratory; Rensselaer Polytechnic Institute, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.770-776
Spatial Channel Theory–A Technique for Determining the Directional Flow of Radiation through Reactor Systems.
Williams, M.L.; Engle, W.W.,Jr.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.777-784
Sensitivity Analysis for Shielding Data Evaluation by Interactive Graphics Computing.
Parvez, A.; Becker, M.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Rensselaer Polytechnic Institute, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.785-794
Analysis of External Exposures of the Personnel Operating the RA Reactor at Vinca.
Ninkovic, M.M.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Boris Kidric Institute of Nuclear Sciences –Vinca, Beograd, Yugoslavia
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.795-803
Results of Neutron Propagation in Steel-Sodium Mixtures with Various Source Spectra on HARMONIE and TAPIRO.
Calamand, D.; Desprets, A.; Rancurel, H.; Vienot, R.; Estiot, J.C.; Trapp, J.P.; Bargellini, M.L.; Bozzi, L.; Martini, M.; Moioli, P.; Antonini, D.; De Carli, A.; Rado, V.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
CEA/Cadarache, France; CNEN/Casaccia, Italy
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.804-811
Use of Integral Data for the Prediction of Neutron Propagation in Iron-Sodium Mixtures.
Estiot, J.C.; Trapp, J.P.; Palmiotti, G.; Salvatores, M.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
CEA/Cadarache, France; CNEN/Casaccia, Italy
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.812-818
Measurements and Calculations of Neutron Fluxes Through a Simulation of the CRBR Upper Axial Shielding.
Maerker, R.E.; Muckenthaler, F.J.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.819-832
UK Fast Reactor Shield Design and Performance.
Butler, J.; Brindley, K. W.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
AEE Winfrith, UK; Nuclear Power Co., Risley, UK
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.833-840
Two-Dimensional Shielding Benchmarks for Sodium and Iron at YAYOI.
Oka, Y.; An, S.; Kasai, S.; Sakata, S.; Miyasaka, S.; Koyama, K.; Hyodo, T.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
University of Tokyo; Kyoto University; JAERI, Japan
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.841-848
Integral Tests of Niobium Cross Sections Through Simultaneous Measurements of Neutron and Gamma-Ray Leakage Spectra.
Ingersoll, D.T.; Dorning, J.J.; Wehring, B.W.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory; University of Illinois, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.849-856
Mock-Up Experiment of Radiation Streaming Through Coolant Pipe Penetration.
Tsubosaka, A.; Miyakoshi, J.; Furuta, K.; Kawakita, T.; Natume, H.; Nishizaki, T.; Okumura, Y.; Miyasaka, S.; Asaoka, T.; Taji, Y.; Ise, T.; Koyama, K.; Tsutsui, T.; Takeuchi, M.; Fuse, T.; Miura, T.; Yamaji, A.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Nuclear Ship Development Agency; Ship Research Institute, Japan
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.857-864
Intercomparison of Monte Carlo Calculations and Measurements of the Neutron and Gamma-Ray Streaming in Multibend Ducts.
Vogt, D.G.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Technische Universitat Hannover, FR Germany
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.865-872
Calculations of Neutron Radiation Levels from HTGR Spent Fuel.
Sund, R.K.; Engholm, B.A.; Su, S.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
General Atomic Co., USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.873-880
Analysis of a Fuel-Pin Neutron-Streaming Experiment to Test Methods for Calculating Neutron Damage to the GCFR Grid Plate.
Slater, C.O.; Emmett, M.B.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Oak Ridge National Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.881-888
Radiation Doses as a Function of Thickness and Shielding Material Surrounding a 14 MeV Neutron Source.
Hansen, L.F.; Komoto, T.; Wong, C.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Lawrence Livermore Laboratory, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.889-896
Spatial Distribution of Fission Product Energy.
Johnson, W.R.; Bass, R.B.; Littig, G.A.; Robinson, F.L.; Bracke, T.P.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Univ. of Virginia, USA
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.897-904
In Situ Measurements with a Mobile Ge(Li) Spectrometer Around a Nuclear Power Plant.
Finck, R.; Liden, K.; Persson, R.B.R.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
University of Lund, Sweden
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.905-912
Fresh Concrete Control in Situ of Biological Shields of Nuclear Reactors.
Honig, A.
Dec. 1977
Science Press, 8 Brookstone Dr., Princeton, NJ 08540
Brno Technical University, Czechoslovakia
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.913-921
Secondary Gamma Radiation Study in Reactor Shielding.
Abagjan, A.A.; Gasnikov, N.K.; Germogenova, T.A.; Bubinin, A.A.; Zhuravlyov, V.I.; Kolevatov, Yu.J.; Kurachenko, Yu.A.; Mashkovitch, V.P.; Sakharov, V.K.
Dec. 1977
Science Press, 8 Brockstone Dr., Princeton, NJ 08540
USSR
In: Proc. Fifth International Conf. on Reactor Shielding

CONF-770401, pp.922-930
Neutron Quasibledos from Plane Reflectors.
Abagjan, A.A.; Germogenova, T.A.; Dubinin, A.A.; Zhuravlyov, V.I.; Klimanov, V.A.; Mashkovitch, V.P.; Stroganov, A.A.
Dec. 1977
Science Press, 8 Brockstone Dr., Princeton, NJ 08540
USSR
In: Proc. Fifth International Conf. on Reactor Shielding

ECN-14
Tables and Figures of Adjusted and Unadjusted Capture Group Cross Sections Based on the RCN-2 Evaluation and Integral Measurements in STEK. Vol.I.
Dekker, J.W.M.
February 1977
Dep., NTIS (U.S. Sales Only)

HEDL-TME-77-44
High ^{240}Pu FTR/EMC Experiments and Analysis: Carbide Fuel and UO_2 Blanket Subassembly Worths.
Ombrellaro, P.A.
June 1977
Dep., NTIS

KFK-77-17
Measurement of Stray Neutron Doses Around KEK PS-Facility.
Miyajima, M.; Hirayama, H.; Hozumi, K.; Miura, S.; Katoh, K.
December 1977
National Laboratory for High Energy Physics, *Oho-Machi, Tsukuba-Gun, Ibaraki, Japan*

NESP Report
Compilation and Analysis of Data on Occupational Radiation Exposure Experienced at Operating Nuclear Power Plants.
Pelletier, C.A.; Simmons, L.; Barbier, M.; Keller, J.H.
September 1974
Atomic Industrial Forum, Inc., 475 Park Avenue South, New York, New York 10016 $7.00

ORNL/NUREG/TM-174
Fission Product Beta and Gamma Energy Release. Quarterly Progress Report for July-September 1977.
Dickens, J.K.; Emery, J.F.; Freestone, R.M.; Love, T.A.; McConnell, J.W.; Northcutt, K.J.; Peelle, R.W.
January 1978
NTIS $4.50

ORNL/TM-6108
Sensitivity of Primary Knock-on Atom Spectra and Displacement per Atom Cross-Sections to Different Secondary Neutron Energy and Angular Distributions and "In-Group" Weighting Schemes.
Gabriel, T.A.; Bishop, B.L.
January 1978
NTIS $4.50

ORNL/TM-6138
Preliminary Report on the Promise of Accelerator-Driven Natural-Uranium-Fueled Light-Water-Moderated Breeding Power Reactors.
Greenspan, E.
February 1978
NTIS $6.00

ORNL/TM-6145
Analysis of a Neutron Scattering and Gamma-Ray Production Integral Experiment on Silicon Dioxide for Neutron Energies from 1 to 15 MeV.
Cramer, S.N.; Oblow, E.M.

January 1978
NTIS $4.50

ORNL/TM-6146
Analysis of a Neutron Scattering and Gamma-Ray Production Integral Experiment on Aluminum for Neutron Energies from 1 to 15 MeV.
Cramer, S.N.; Oblow, E.M.
January 1978
NTIS $4.50

RR-77-8
Fusion and Fast Breeder Reactors.
Hafele, W.; Holdren, J.P.; Kessler, G.; Kulcinski, G.L.
July 1977
International Institute for Applied Systems Analysis, Austria

UCRL-50400, Vol.15, Pt.D
The LLL Evaluated Nuclear Data Library (ENDL): Descriptions of Individual Evaluations for Z = 90-98.
Howerton, R.J.; MacGregor, M.H.
June 17, 1977
NTIS $9.00

UCRL-78946; CONF-770720-2
Environmental Neutron Spectrum Outside the LLL High-Intensity 14-MeV Neutron Facility.
Slaughter, D.R.; Rueppel, D.W.
June 9, 1977
Dep., NTIS

Nucl. Sci. Eng., 65(2), 209-225
The C_N Method of Solving the Transport Equation: Application to Plane Geometry.
Kavenoky, A.
February 1978

Nucl. Sci. Eng., 65(2), 226-236
Generalized Rebalance: A Common Framework for Transport Acceleration Methods.
Miller, W.R.,Jr.
February 1978

Nucl. Sci. Eng., 65(2), 237-253
Application of the Fictitious Scattering Radiation Transport Model for Deep-Penetration Monte Carlo Calculations.
Cramer, S.N.
February 1978
Announced previously as ORNL/TM-4880

Nucl. Sci. Eng., 65(2), 273-281
Prediction of Monte Carlo Errors by a Theory Generalized to Treat Tract-Length Estimators.
Booth, T.E.; Amster, H.J.
February 1978

Nucl. Sci. Eng., 65(2), 354-367
Use of Interactive Graphic Techniques to Evaluate Uranium-238 Cross Sections from Integral Measurements.
Parvez, A.; Becker, M.
February 1978

Nucl. Sci. Eng., 65(2), 368-384
Application of Nuclear Reaction Models for Neutron Nuclear Data Evaluation: Statistical and Optical Model Calculations for $^{134-138}$Ba.
Strohmaier, B.; Uhl, M.; Matthes, W.K.
February 1978

Nucl. Sci. Eng., 65(2), 415-416
Restrained Acceleration in Iteration. (Tech. Note)
Vondy, D.R.; Fowler, T.B.
February 1978

Nucl. Sci. Eng., 65(2), 416-419
Some Observations on Transverse Leakage Approximations in Multidimensional Transport Theory. (Tech. Note)
Williams, M.M.R.; Kallfelz, J.M.
February 1978

Phys. Med. Biol., 22(5), 836-851
Monte Carlo Calculations of the Energy Response of Lithium Dosemeters to High Energy Electrons (<30 MeV).
O'Brien, K.
1977

Soviet J. At. Energy(English Transl.), 41(6), 1089-1090
Numerical Gamma-Ray Albedo from Limited Sections of the Surface of Reflecting Barriers.
Pozdneev, D.B.; Faddeev, M.A.
December 1976

Soviet J. At. Energy(English Transl.), 42(1), 18-22
Estimate of Perturbations in Solving Nonuniform Neutron Transport Problems by the Monte Carlo Method.
Usikov, D.A.
January 1977

COMPUTER CODES LITERATURE

BAW-10115A ..... NULIF
NULIF: Neutron Spectrum Generator, Few-Group Constant Calculator, and Fuel Depletion Code.
Wittkopf, W.A.; Tilford, J.M.; Andrews, J.B.; Kirschner, G.; Hassan, N.M.; Colpo, P.N.
Babcock and Wilcox Company, Lynchburg, Virginia
February 1977

CNEN-RT/FI-77-3 ..... CRAPONE
CRAPONE, A FORTRAN IV Code for the Automatic Search for Local and Non Local Optical Potential Parameters for Neutrons.
Fabbri, F.; Fratamico, G.; Reffo, G.
Comitato Nazionale per L'Energia Nucleare, Bologna, Italy
1977
FORTRAN IV

FEI-508 (In Russian)
MENAOT; MODSPECTRA; REGUS; MODMESKO
Some Methods of Neutron Spectra Reconstruction According to Results of Measurements by Multispherical Spectrometer. Part 2. Program of Reconstruction of Neutron Spectra for a Multispherical Spectrometer.
Semenov, V.P.; Trykov, L.A.; Tyufyakov, N.D.
Gosudarstvennyj Komitet po Ispol'zovaniyu Atomnoj Ehnergii SSSR, Obninsk, Fiziko-Ehnergeticheskij Inst.
1975
ALGOL M-220

FEI-610 (In Russian) ..... VSARI
Program for Reconstruction of Gamma-Quantum Spectra from Pulse Amplitude Distributions (VSARI).
Kolevatov, Yu.I.
Gosudarstvennyj Komitet po Ispol'zovaniyu Atomnoj Ehnergii SSSR, Obninsk, Fiziko-Ehnergeticheskij Inst.
1975
ALGOL-60

IAE-2513 (In Russian)
..... KINETIC EQUATIONS
Solution of the Kinetic Equation in the P3-Approximation in a Plane Geometry.
Vlasov, Yu.A.
Gosudarstvennyj Komitet po Ispol'zovaniyu Atomnoj Ehnergii SSSR, Moscow, Inst. Atomnoj Ehnergii
1975
ALGOL-60 M-20; M-220; M-222; BESM-4

IAE-2588 (In Russian) RKU-1
Solution of the Neutron Transport Equation in a Plane Layer.
Vlasov, Yu.A.
Gosudarstvennyj Komitet po Ispol'zovaniyu Atomnoj Ehnergii SSSR, Moscow, Inst. Atomnoj Ehnergii
1975
ALGOL-60 BESM-6

IFVE-LRI-75-74 (In Russian) MARS-3
MARS-3 Program - Monte Carlo Calculation of Three-Dimensional High Energy Hadron Cascade in Heterogeneous Media.
Kuchinin, S.L.; Rastsvetalov, Ya.N.; Mokhov, N.V.
Gosudarstvennyj Komitet po Ispol'zovaniyu Atomnoj Ehnergii SSSR, Serpukhov. Inst. Fiziki Vysokikh Ehnergij; Moskovskij Inzhenerno-Fizicheskij Inst.
1975
FORTRAN BESM-6

INIS-mf-3663, 24-26 ..... HIT
The HIT (Homogeneous Integral Transport) Code.
Regev, D.; Ronen, Y.
Ben-Gurion Univ. of the Negev, Beersheba, Israel, Department of Nuclear Engineering
1976

INIS-mf-3663, 27-29
..... NEUTRINO TRANSPORT
Can Reactor Physicists Do Neutrino Transport?
Bludman, S.A.; Lichtenshtadt, I.; Ron, A.; Sack, N.; Wagschal, J.J.
Hebrew Univ., Jerusalem, Israel, Racah Inst. of Physics
1976

JAERI-M-6769 ..... NUCLEAR FUSION CODES
Catalogue of Nuclear Fusion Codes - 1976.
Japan Atomic Energy Research Institute, Tokyo, Japan
October 1976

JAERI-M-6846 (In Japanese)
..... NDFILE; ABEG
JNDC Nuclear Structure Data File - NDFILE.
Houjuyama, T.; Tasaka, K.; Matsumoto, J.; Nakashima, R.
Japan Atomic Energy Research Institute, Tokyo
December 1976

JAERI-M-6952 ..... SPECTRA UNFOLDING
The Unfolding Code System for the NE213 Liquid Scintillator.
Sasamoto, N.; Tanaka, S.
Japan Atomic Energy Research Institute, Tokai, Ibaraki, Tokai Research Establishment
February 1977

JAERI-M-7017 ..... BOB7
Usage of the BOB7-Series Programs for the Analysis of Ge(Li) Gamma-Ray Spectra.
Baba, H.
Japan Atomic Energy Research Institute, Tokyo
March 1977

JAERI-M-7025 (In Japanese)
..... DAMD; TACA; TREE; DCHAIN
DAMD Code for Producing Nuclear Data Library of Fission Products.
Ihara, H.; Tsaka, K.
Japan Atomic Energy Research Institute, Tokyo
March 1977

KFTI-75-27 (In Russian) ..... POISK
Optimization of the Charged Particle Beam Transport System.
Anishkin, G.P.; Gonchar, V.Yu.; L'vov, A.N.; Migalenya, V.Ya.; Yamnitskij, V.A.
AN Ukrainskoj SSR, Kharkov, Fiziko-Tekhnicheskij Inst.
1975

LA-UR-77-392; CONF-761081-1
..... LASS; SENSIT-1D; ONETRAN; ALVIN
Application of the Sensitivity and Uncertainty Analysis System LASS to Fusion Reactor Nucleonics.
Dudziak, D.J.; Gerstl, S.A.W.; Muir, D.W.
Los Alamos Scientific Laboratory, New Mexico
1976

LA-UR-77-923; CONF-770401-16
..... ONETRAN; TIMEX
Application of the ONETRAN and TIMEX Codes to Shielding Problems.
Hill, T.R.
Los Alamos Scientific Laboratory, New Mexico
1977
AVAIL: NTIS

ORNL-5245 ..... AIRDOS-II
AIRDOS-II Computer Code for Estimating Radiation Dose to Man From Airborne Radionuclides in Areas Surrounding Nuclear Facilities.
Moore, R.E.
Oak Ridge National Laboratory, Oak Ridge, Tennessee
April 1977
AVAIL: NTIS

RT/FI-77-4 ..... ERINNI; CERBERO
ERINNI, An Optical Model FORTRAN IV Code for the Calculation of Multiple Cascading Particle Emissions.
Fabbri, F.; Reffo, G.
Comitato Nazionale per L'Energia Nucleare, Bologna, Italy
1977
FORTRAN IV

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