RSIC Newsletter

RADIATION SHIELDING INFORMATION CENTER

OAK RIDGE NATIONAL LABORATORY

OPERATED BY UNION CARBIDE CORPORATION FOR THE U.S. DEPARTMENT OF ENERGY

POST OFFICE BOX X • OAK RIDGE, TENNESSEE 37830

No. 164 *August 1978*

Work is often the father of all pleasure. . . . *Voltaire*

FINAL PLANS FOR AUGUST SENSITIVITY-UNCERTAINTY SEMINAR-WORKSHOP

Plans are essentially complete for the RSIC seminar-workshop on the *Theory and Application of Sensitivity and Uncertainty Analysis* to be held in Oak Ridge, Tennessee at the Royal Scotsman Inn August 22–24, 1978.

A preliminary program for the seminar was published in the June 1978 RSIC Newsletter. The Tuesday morning (August 22) session on *Sensitivity and Uncertainty Analysis for Fast and Thermal Reactors* will be chaired by E. Greenspan, Nuclear Research Center and Ben Gurion University of the Negev, Israel. Francis Perey, ORNL, will chair the Tuesday afternoon session on *Sensitivity and Uncertainty Analysis for Dosimetry and Fusion Reactor Applications*. C. R. Weisbin, ORNL, will chair the Wednesday morning session on *Advances and Future Extensions for Sensitivity and Uncertainty Analysis*.

The workshop on the FORSS system will begin on Wednesday afternoon and continue on Thursday, concluding at about 5:00 p.m. A tentative schedule is as follows.

Wednesday, August 23—2:00 p.m.

FORSS: An Overview of FORSS Sensitivity and Uncertainty Methodology, C. R. Weisbin, ORNL.

Overview of the FORSS System: An Introduction to Modules and Their Interaction, J. L. Lucius, ORNL.

FORSS Cross-Section Requirements and Preparation, W. E. Ford, III, ORNL.

Error Files, Covariance Matrices, the COVERX File, J. D. Smith, F. G. Perey, ORNL.

FORSS-ANISN, E. M. Oblow, ORNL.

Thursday, August 24—8:30 a.m.

JULIET: Calculation of Generalized Sources, Responses, Normalization Parameters, and Sensitivity Coefficients, J. L. Lucius, ORNL.

The SENPRO File and the SENPRO Service Module, J. L. Lucius, ORNL.

SENTINEL: Analysis of the Effect of Cross-Section Changes, R. Q. Wright, ORNL.

COVERT and CAVALIER: Uncertainties Due Exclusively to Nuclear Data Uncertainties, J. H. Marable, ORNL.

SENPRO and COVERX Files Available from RSIC, R. W. Roussin, ORNL.

Improved FIDO, J. H. Marable, ORNL.

UNCOVER: Uncertainties with Integral Experiments Taken Into Account and Adjustment, J. H. Marable, ORNL.

COVERS: Data Preparation for UNCOVER, J. L. Lucius, ORNL.

NTCRACKR: The Inverse Problem, J. H. Marable, ORNL.

Thursday, August 24—1:30 p.m.

Discussion of the Use of FORSS and Demonstration with Sample Problems **(All)**

Adjournment—5:00 p.m.

NBS NEW MANAGEMENT STRUCTURE

The National Bureau of Standards (NBS) began operating on a new internal management structure, April 9, 1978. The new organization divides the scientific and technical work of the Bureau into three major units, a National Measurement Laboratory, a National Engineering Laboratory, and an Institute for Computer Sciences and Technology. The Office of Standard Reference Data will be located in the National Measurement Laboratory, along with other program offices at the NBS, whose responsibilities cut across a large number of scientific and engineering disciplines.

FAREWELL TO "ARGONNE CODE CENTER"—HELLO TO "NESC!"

The "Argonne Code Center," in operation at Argonne National Laboratory for 18 years is no more! The name of this well-known computer codes exchange center was officially changed on July 5, 1978, to the **National Energy Software Center** (NESC). This ANL effort, led by Margaret Butler since its establishment, which has from the beginning served as a national resource for nuclear codes, will now serve as a repository and disseminating center for software applicable to all forms of energy.

The name change was made, according to the announcement, to better reflect present activity and current information-processing terminology.

CORRECTIONS TO PUBLISHED ITEMS

Meeting a deadline for a monthly newsletter while continuing business as usual carries certain inherent hazards, among which are possible inaccuracies and incomplete material. We depend on our readers to call our attention to inaccuracies and to let us know when additional information is needed. A monthly newsletter gives us an opportunity to issue corrections, revisions, and extensions in a timely manner. We are pleased to call your attention to the following two corrections. *Editor*

ANS Awards

Last month we reported on the recent awards by the American Nuclear Society Radiation Protection and Shielding Division to Ray Ashley and Dave Bartine and listed previous such awards. Unfortunately, we omitted Keran O'Brien (DOE Environmental Measurements Laboratory) and Norman Schaeffer (Radiation Research Associates) who won these awards in November 1976 (RSIC Newsletter No. 146, Feb. 1977). Goldstein and Profio were the recipients in June 1977 (RSIC Newsletter, July 1977).

German Standards Availability

In the June issue we announced the availability of three standards, published by the Nuclear Engineering Standards Committee of the German Institute for Standardization, translated by an ORNL consultant, and edited at RSIC in consultation with Professor H. Schultz of the Technical University of Hannover. These standards are now available through the National Technical Information Service (NTIS), Department of Commerce, Springfield, VA 22151. Price is $4.50 per hardcopy, $3.00 microfiche. They cannot be obtained from the Technical Information Center in Oak Ridge as stated in the June issue. We extend our apologies for any inconvenience this may have caused our readers.

The translations are as follows: Classification of Concretes for Neutron Shielding in Respect to Atomic Composition: DIN 25 413, ORNL-tr-4460; Design of Gas-Filled Double-Bend Ducts in Concrete Shields Against Gamma Radiation: Definitions and Conditions, DIN 25 427, Part 1, ORNL-tr-4461; and Design of Gas-Filled Double-Bend Ducts in Concrete Shields Against Gamma Radiation: Proportionment of the Duct and the Embedded Iron Layers for Point Source Radiation and Collimated Radiation: DIN 25 427, Part 2, ORNL-tr-4462.

ANS SPECIAL SESSION ON RADIATION STREAMING

A special session on **Radiation Streaming in Power Reactors** will be held at the American Nuclear Society (ANS) 1978 Winter Meeting to be held November 15, 1978, in Washington, D.C. The session is

co-sponsored by the ANS Mathematics & Computation (M&C) and Radiation Protection & Shielding (RP&S) divisions, and RSIC will publish the papers as a special report. Robert R. Lee of Combustion Engineering, Inc. (M&C) and Gerald P. Lahti of Sargent & Lundy, Engineers (RP&S), Co-Chairmen, have arranged the following program.

Neutron Flux Determinations in the Reactor Cavities of LWR's, F. J. Rahn, H. Till (EPRI).

Analysis of Reactor Cavity Streaming: Some Practical Considerations, G. L. Simmons (SAI).

Applications of Monte Carlo and Discrete Ordinates Techniques to PWR Cavity Shield Design, G. P. Cavanaugh (Combustion Engineering).

Reactor Cavity Radiation Streaming, J. M. Cardito, E. A. B. Eastman, P. W. Allen, K. M. Wainio (Stone & Webster).

Methodology for the Analysis and Design of a PWR Reactor Cavity Shield System, J. Celnik (Burns & Roe).

An Improved Streaming Analysis Technique. . .Spherical Harmonics Expansion of Albedo Data, T. E. Albert & G. L. Simmons (SAI).

Reactor Cavity Streaming. . .The Problem & Engineering Solutions, Robert C. Iotti, T. L. Yang, (Ebasco) and W. H. Rogers (FP&L).

Measured Distribution of Neutrons Inside Containment of a PWR, H. W. Butler, W. F. Ohnesorge, and J. A. Auxier (ORNL).

A Survey of Neutrons Inside the Containment of a PWR, D. E. Hankins, R. V. Griffith (Lawrence Livermore Laboratory).

Calculations of the Neutron Environment Inside a PWR Containment, W. C. Hopkins (Bechtel).

A Low-Pressure Drop Reactor Cavity Shield System, R. J. Klotz (Combustion Engineering).

Radiation Streaming & Reactor Cavity Shield Design at TVA PWR Plants, C. C. Francis, T. M. Galbreth, W. Zobel (TVA).

Radiation Shielding for BWR Shield Wall Penetrations, T. C. Gillett (C. F. Braun), J. K. Warkentin (RRA), D. R. Rogers (GE).

Shield Design Against Neutron Streaming in the Vicinity of a BWR Pressure Vessel, L. Seifferth, E. Przibram, and R. Hock (Kraftwerk Union).

RADIOLOGICAL PROTECTION COURSES SCHEDULED

Two intensive courses, sponsored and arranged by the National Radiological Protection Board and presented in conjunction with the Harwell Education Centre of the United Kingdom Atomic Energy Authority (UKAEA), are scheduled for October 2–27, 1978 (Advanced Course) and March 12–April 6, 1979 (Post-Graduate Course). The Post-Graduate course is intended to meet the initial and early training requirements of full-time operational health physics staff of graduate level or equivalent. Topics of interest will include Nuclear Physics; Sources and Uses of Radiation; Instrumentation; Radiation Biology; Maximum Permissible Levels; Dosimetry; Occupational Protection; Population Protection; Legal, Medical, Administrative; Non-Radiological Hazards; Practical Work Sessions; and Visits to Installations. The Advanced Course, for the experienced health physicist, will extend his understanding of the underlying philosophy and scientific bases of his profession. The course consists of lecturers plus group exercises, discussion seminars, and visits. A fee of £840 (Post-Graduate) and/or £960 (Advanced) is required. For further information contact The Education & Training Centre, A.E.R.E. Harwell, Oxfordshire 0X11 0QJ, England.

ISPRA COURSES OFFERED

Radiation Shielding Methods—This course, organized by the Joint Research Centre (JRC), will be held at Ispra November 20–24, 1978, by the European Shielding Information Service (ESIS). There will be three main sections: Basic Shielding Theory, Codes and Data for Shielding Calculations, and Shield Design. Topics which will be emphasized in the course are the calculation methods and the computer codes widely applied in shielding calculations, the nuclear data libraries which are now available, and the kind of accuracy which can be expected from the calculations. Many examples of shield design will be reported to illustrate the application of different methods to a variety of problems. The course will be given in English by lecturers from different European countries. Registration fee is Lit. 160.000 (approx. U.S.

$186.00). For further information contact C. Ponti, ESIS Bldg. 36, 21020 Euratom, Ispra (Varese), Italy.

Program Library and Information Service Techniques—This Ispra course, organized by the European Computer Program Institute (EUROCOPI) in cooperation with the European Association for Software Access and Information Transfer (EASIT), will be given in the Joint Research Centre (JRC) of the Commission of the European Communities at Ispra (Varese), Italy, October 17–20, 1978. It is intended to illustrate the problems and techniques involved in the organization and the operation of a program library and program information services, as well as technical aspects of programming for software sharing. The topics to be covered are: Technology transfer through computer programs; Means for software access and sharing; Information service and users support; Program library service in a computer network environment; Administration of a program library, a case study; Computer program portability, theory and practice; Programming language standards; Program analysers for checking conformity with standards; Standards for program documentation; Program classification and indexing for catalogues and on-line information service; and Storage and reproduction of programs, a case study. The fee for the course is Lit. 130.000 (price of lunch included), and the deadline for acceptance of enrollment is October 2, 1978. For further information contact Secretariat Ispra-Courses, Centro Euratom, 21020 Ispra (Varese), Italy.

THREE NEW ICRU REPORTS

The availability of three new reports has been announced by the International Commission on Radiation Units and Measurements (ICRU): ICRU Report 27, *An International Neutron Dosimetry Intercomparison;* ICRU Report 28, *Basic Aspects of High Energy Particle Interactions and Radiation Dosimetry;* and ICRU Report 29, *Dose Specification for Reporting External Beam Therapy with Photons and Electrons.*

ICRU Report 27 represents the culmination of an effort that began when the ICRU recognized the increasing interest in the use of neutrons in biology and medicine. Noting that generally accepted standards for neutron dosimetry did not exist, ICRU determined to sponsor an international neutron dosimetry intercomparison which was intended to compare the results obtained by various individuals or groups in performing absolute fast neutron dosimetry. The intercomparison was carried out in 1973 with fourteen groups of scientists participating; the results were analyzed and Report 27 was prepared. In addition to providing an analysis of the intercomparison results, the Report describes the intercomparison procedure, the radiation fields used, the dosimetry systems employed by the participants and important factors in the evaluation of kerma and absorbed dose.

ICRU Report 28 is concerned with high energy radiation dosimetry, dealing with the fundamental considerations underlying the dosimetry of radiations having energies in excess of about 10^8 eV. A substantial portion of the report deals with the physics of high energy radiation, with particular emphasis on dosimetric aspects, and also treats the radiation environment surrounding accelerators, in space, and at supersonic aircraft altitudes. Finally, the report presents an analysis of the problem of dose equivalent specification and a survey of absorbed dose and dose equivalent measurement techniques. The report contains an appendix giving stopping powers for protons in the energy range 1-1000 MeV.

ICRU Report 29 is the third in a series of ICRU reports intended to cover the steps pertaining to dosimetry in the radiotherapy clinic, from the determination of the output of the therapy machine to the assessment of the absorbed dose in the patient. The first report of the series, ICRU Report 23, *Measurement of Absorbed Dose in a Phantom Irradiated by a Single Beam of X or Gamma Rays,* treats procedures relating to the determination of the absorbed dose at any point in a cuboid water phantom. ICRU Report 24 is concerned with the transition from the water phantom to the human patient. The new report, ICRU Report 29, *Dose Specification for Reporting External Beam Therapy with Photons and Electrons,* defines important volumes, areas and absorbed dose patterns, and recommends methods of specifying the absorbed dose in reports of treatments with external radiation beams. The Report first defines terms and concepts currently used in radiotherapy and then provides recommendations for reporting external beam therapy. It also includes a brief section on reporting two factors influencing the biological effect—radiation quality and time-dose pattern.

Single copies of the reports can be purchased at the following prices: ICRU Report 27: $8.00; ICRU Report 28: $8.50; and ICRU Report 29: $7.50. Individuals and organizations already on the ICRU Publications Standing Order List will receive copies of the new reports automatically and be invoiced for their order. Others may purchase copies of the new reports or place their name on the Standing Order List by directing their order to ICRU Publications, P. O. Box 30165, Washington, D.C. 20014, U.S.A.

1978 CATALOG OF TECHNICAL BOOKS AND MONOGRAPHS AVAILABLE

Technical Books and Monographs, a bibliography of books and monographs sponsored by the U.S. Department of Energy (DOE) and by the organizations brought together to form DOE, is published to help meet the information needs of scientists and engineers working in energy-related fields. This catalog provides access to a large body of knowledge generated by many programs—programs as diverse as the field of nuclear medicine, the exploration of physical mechanisms at work in the environment, and the varied technologies required to realize the potential of the country's energy sources.

Technical Books and Mongraphs provides a brief descriptive statement, lists or describes the contents for the most recent publications, and indicates the availability. The more than 545 publications are grouped under the following subject categories: general reference, biology and medicine, chemistry, computers and mathematics, energy, engineering and instrumentation, environment, health and safety, isotope separation, metallurgy and materials, physics, reactors, and vacuum technology. Included in the catalog are the titles from monograph series prepared in cooperation with the American Chemical Society, American Industrial Hygiene Association, American Institute of Biological Sciences, American Nuclear Society, and American Society for Metals. In addition to the technical books and monographs, separate sections at the end of each subject category list approximately 238 recent published symposiums from DOE projects and recent and relevant bibliographies. Title, author, and series indexes are provided.

Technical Books and Monographs is available as TID-4582-R13 without charge from DOE Technical Information Center, P. O. Box 62, Oak Ridge, Tennessee 37830.

VISITORS TO RSIC

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

William D. Beckner, U.S. Nuclear Regulatory Commission, Washington, D.C.; Joe T. Ching and Koichi Takazawa, University of California, Berkeley; J. Tim Ensminger and Park Owen, Environmental Sciences Information Center, ORNL; and Magdi M. H. Ragheb, University of Wisconsin, Madison.

UPCOMING CONFERENCES

International Conference of Plasma Physics—April 7–11, 1980, Nagoya, Japan. Contact International Conference of Plasma Physics, C/O Institute of Plasma Physics, Nagoya University, Nagoya 464, Japan.

International Conference on Radiation Protection in Nuclear Power Plants and the Fuel Cycle—November 27 – December 1, 1978, London, England. Contact The Secretariat, British Nuclear Energy Society at the Institution of Civil Engineers, 1–7 Great George Street, Westminster, London SW1P 3AA, England.

CHANGES IN THE COMPUTER CODE COLLECTION

The following changes were made in the computer code collection during the month.

CCC-203/MORSE CG

The general purpose Monte Carlo multigroup neutron and gamma-ray transport code system was updated to make the following replacements in Subroutine G1 for statement numbers 320, 330, 620, and 630:

```
320    IF (ROUT-DIST.LE.EPS*DIST.OR.RIN.GT.DIST) GO TO 400
330    IF (RIN-DIST.LE.EPS*DIST.AND.DIST.LT.ROUT) GO TO 400
620    IF (ROUT-DIST.LE.EPS*DIST.OR.RIN.GT.DIST) GO TO 650
630    IF (RIN-DIST.LE.EPS*DIST.AND.DIST.LT.ROUT) GO TO 650
```

These changes prevent round-off errors from causing fatal geometry errors. Information for this update was supplied by the code originators at Oak Ridge National Laboratory. FORTRAN IV; UNIVAC(A), CDC(B), and IBM(C).

CCC-217/ORIGEN

The CDC Version (B) of the code package for isotope generation and depletion, matrix exponential method, was extended by the addition of data libraries and sample problem input/output, supplied by the ORNL code originators, and was further updated to correct an error brought to RSIC's attention by John Beerman of Brookhaven National Laboratory and S. J. Nathan of NUS. Data errors in Subroutine PHOLIB: 15th card (data statement), the 8th value should be 0.63 (not 0.60); 16th card, the 16th value (4.22) was omitted. FORTRAN IV; CDC-6400. Other ORIGEN versions remain unchanged.

CCC-255/ANISN-W

The CDC-6600 (Version A) multigroup one-dimensional discrete ordinates transport code package was updated to correct an error called to RSIC's attention by Dr. Yehudah Wagschall of the Hebrew University, Jerusalem, Israel. Users of ANISN-W (A) may make corrections as follows: Subroutine CONTROL, statement numbers 5 and 10, I was changed to II. The corrected statements read:

```
5     DO 10 II = 70,162
10    D(II) = 0.0
```

No other CCC-255 versions are affected.

PSR-75/AXMIX

The CDC 6500/CDC CYBER version (PSR-75B) of the ANISN/DOT cross-section mixing code package, AXMIX, was updated to add GIP, a group-organized cross-section input program converted from the IBM 360 version (A) by the Nuclear and Flow Systems Section of Battelle Columbus Laboratories. GIP reads nuclide-organized cross-section data libraries prepared for ANISN/DOT and prepares a group-organized library, making ANISN/DOT memory requirements almost independent of the number of energy groups. FORTRAN IV; CYBER-73.

PSR-113/STAY'SL

The STAY'SL least squares dosimetry unfolding code package was updated to correct an error called to RSIC's attention by its ORNL contributor and George Guthrie of Hanford Engineering Development Laboratory (HEDL). A card, **C3=1**, was inserted in the main program **between cards C2=0 and DO 41=1,KA.** This correction was needed to properly execute the normalization option: NOR=0. Current users may correct their own version. FORTRAN IV, PDP-10. Reference: ORNL/TM-6062.

JULY 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

AHS-EXO-77-1; ESA-CR(P)-926; N-77-29195
Study of Radiation Shielding Requirements for n-MOS Devices on the Exosat Spacecraft. Final Report.
Holmes-Siedle (Andrew), Oxford (UK)
February 1977
NTIS

AMMRC-TR-77-18; AD-045362
Radiography with the Fission Neutrons from Californium-252. Final Report.
Antal, J.J.; Becker, R.L.
July 1977
NTIS

BNL-23277; CONF-771062-3
Use of DBMS-10 for Storage and Retrieval of Evaluated Nuclear Data Files.
Dunford, C.L.
1977
Dep., NTIS

BRL-MR-2761; AD-A-042667
Coupling of X-Ray Deposition to Structural Response. Final Report.
Wisniewski, H.L.
June 1977
NTIS

CERL-IR-E-112; AD-A-042429
Effects of Fast and Thermal Neutron Flux and Gamma Radiation on the Transmission Characteristics of Optical Fibers. Interim Report.
Sieber, D.C.; McCormack, R.G.; Croisant, W.J.
July 1977
NTIS

CONF-770611-34
Neutron and Gamma Transport Effects by Heterogeneous Core Designs.
Lam, S.K.
1977
Dep., NTIS

CONF-780401
Advances in Reactor Physics.
Silver, E.G. (Ed.)
Proceedings of an American Nuclear Society Topical Meeting, Gatlinburg, Tenn., April 10-12, 1978.
June 1978
NTIS $16.50

CONF-780401, pp.53-62
Benchmark Shielding Experiments for Testing Iron and Steel Data.
McCombie, C.; Gmur, K.; Jermann, M.; Richmond, R.; Schmocker, U.; Seth, S.
June 1978
NTIS

CONF-780401, pp.93-105
Computational Procedures for Multidimensional Core Analysis.
Lathrop, K.D.
June 1978
NTIS

CONF-780401, pp.269-283
Recent Developments in Cross Section Adjustment Procedures.
Salvatores, M.
June 1978
NTIS

CONF-780401, pp.329-339
The Background Cross Section Method as a General Tool for Reactor Analysis.
MacFarlane, R.E.; Kidman, R.B.; LaBauve, R.J.; Becker, M.
June 1978
NTIS

COO-2458-18
Multigroup Formalism for Evaluation of Continuous Slowing Down Theory Parameters.
Parvez, A.; Becker, M.
1975
Dep., NTIS

DUN-SA-151
N Reactor Shielding.
Davis, H.S.
September 5, 1970
NTIS

FTD-ID(RS)T-0838-77; AD-A-045934
Effect of Neutron Radiation on the Elastic Moduli of Gallium Arsenide.
Sirota, N.N.; Kurilovich, N.F.
1976
NTIS

GKSS-77/E/19
Determination of Conveyor-Flow Parameters by Gamma-Ray Transmission Analysis.
Fanger, H.U.; Pepelnik, R.; Michaelis, W.
1977
Dep., NTIS (U.S. Sales Only)

IAEA-208, Vol.I
Neutron Cross Sections for Reactor Dosimetry. Vol.I. Review Papers.
Vlasov, M.F. (Ed.)
1978
Prepayment of US $0.65 or against one IAEA microfiche service coupon - INIS Microfiche Clearinghouse, IAEA, Karntner Ring 11, P.O. Box 590, A-1011 Vienna, Austria

IAEA-208, Vol.I, pp.1-49
Neutron Cross Sections for Reactor Dosimetry - Review Papers. Summary Report.
Vlasov, M.F. (Ed.)
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INIS Microfiche Clearinghouse

IAEA-208, Vol.I, pp.53-104
Benchmark Neutron Fields for Reactor Dosimetry.
Grundl, J.; Eisenhauer, C.
1978
INIS Microfiche Clearinghouse

IAEA-208, Vol.I, pp.105-140
Power Reactor Pressure Vessel Benchmarks.
Rahn, F.J.
1978
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IAEA-208, Vol.I, pp.141-143
Remarks on Terminology and Symbols for Physical Quantities in Neutron Metrology.
Wagner, S.R.
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IAEA-208, Vol.I, pp.147-181
Spectral Characterization by Combining Neutron Spectroscopy, Analytical Calculations, and Integral Measurements.
McElroy, W.N.; Gold, R.; Lippincott, E.P.; Fabry, A.; Roberts, J.H.
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IAEA-208, Vol.I, pp.183-195
A Review on Standard Fission Neutron Spectra of ^{235}U and ^{252}Cf.
Knitter, H.H.
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INIS Microfiche Clearinghouse

IAEA-208, Vol.I, pp.197-230
In-Pile Neutron Spectrometry: Status.
De Leeuw-Gierts, G.; De Leeuw, S.
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IAEA-208, Vol.I, pp.233-263
Review of Microscopic Integral Cross Section Data in Fundamental Reactor Dosimetry Benchmark Neutron Fields.
Fabry, A.; McElroy, W.N.; Kellogg, L.S.; Lippincott, E.P.; Grundl, J.A.; Gilliam, D.M.; Hansen, G.E.
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IAEA-208, Vol.I, pp.265-300
Ratios of Measured and Calculated Reaction Rates for Some Known Spectra.
Zijp, W.L.; Nolthenius, H.J.; Baard, J.H.
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IAEA-208, Vol.I, pp.301-318
Status of Fission Product Yields Required for Fast Reactor Dosimetry.
Lammer, G.; Lammer, M.
1978
INIS Microfiche Clearinghouse

IAEA-208, Vol.I, 321-351
Remarks Concerning the Accurate Measurement of Differential Cross Sections for Threshold Reactions Used in Fast-Neutron Dosimetry for Fission Reactors.
Smith, D.L.
1978
INIS Microfiche Clearinghouse

IAEA-208, Vol.I, pp.353-360
Comments on Excitation Functions of Threshold Reactions Used in Reactor Neutron Dosimetry.
Vlasov, M.
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IAEA-208, Vol.I, pp.361-373
Status of Some Activation Cross Sections for Reactor Neutron Dosimetry in the Range 13-15 MeV.
Vonach, H.
1978
INIS Microfiche Clearinghouse

IAEA-208, Vol.I, pp.375-394; BNL-22300, CONF-761160-1
ENDF/B Dosimetry File for Version V.
Magurno, B.A.
1978
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IAEA-208, Vol.I, pp.395-406
Evaluation of the Capture Cross Section of ^{197}Au.
Mughabghab, S.F.
1978
INIS Microfiche Clearinghouse

IAEA-208, Vol.I, pp.407-423
^{58}Ni(n,p), ^{58}Ni(n,2n) and ^{60}Ni(n,p) Evaluation for ENDF/B-V.
Divadeenam, M.
1978
INIS Microfiche Clearinghouse

IAEA-208, Vol.I, pp.427-430
General Proposals of Methodology for Cross-Section Validation and Adjustment.
Farinelli, U.
1978
INIS Microfiche Clearinghouse

IAEA-208, Vol.I, pp.431-442
Foil Activation Detectors - Some Remarks on the Choice of Detectors, the Adjustment of Cross-Sections and the Unfolding of Flux Spectra.
McCracken, A.K.; Packwood, A.
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IAEA-208, Vol.II
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Prepayment of US $0.65 or against one IAEA microfiche service coupon - INIS Microfiche Clearinghouse, IAEA, Karntner Ring 11, P.O. Box 590, A-1011 Vienna, Austria

IAEA-208, Vol.II, pp.3-14
Standards for Thermal Neutrons at the PTB.
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IAEA-208, Vol.II, pp.15-27
Fast Neutron Standards at the PTB.
Wagner, S.R.
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IAEA-208, Vol.II, pp.31-35
The IAEA Programme on Intercomparison of the Computer Codes for Neutron Spectra Unfolding by Activation Technique.
Cross, B.
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IAEA-208, Vol.II, pp.37-62
Comparison of Neutron Spectrum Unfolding Codes.
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IAEA-208, Vol.II, pp.63-76
Spectral Characterization of the NISUS Neutron Field.
Williams, J.G.; Hannan, A.H.M.A.
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IAEA-208, Vol.II, pp.77-88
Spectrum Characterization and Threshold Reaction Rate Measurements in the Neutron Field of VIPER.
McTaggart, M.H. (Ed.)
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IAEA-208, Vol.II, pp.89-106
Several Studies of Neutron Standard Field in the Fast Source Reactor "YAYOI".
Sekiguchi, A.; Nakazawa, M.; Kosako, T.; Wakabayashi, H.; Akiyama, M.
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IAEA-208, Vol.II, pp.107-116
Thermal Neutron Standard Fields with the KUR Heavy Water Facility.
Kanda, K.; Kobayashi, K.; Shibata, T.
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