RSIC Newsletter

RADIATION SHIELDING INFORMATION CENTER • OAK RIDGE, TENN., U.S.A.

OAK RIDGE NATIONAL LABORATORY
POST OFFICE BOX X • OAK RIDGE, TENNESSEE 37831
OPERATED BY MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE U.S. DEPARTMENT OF ENERGY

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No. 238 *September 1984*

The certainties of one age are the problems of the next. — R. H. Tawney

GUIDANCE SOUGHT ON MCNP WORKSHOP VIDEO TAPES

The Radiation Transport Group (X-6) at Los Alamos National Laboratory conducted an MCNP Workshop in 1983 for users with access to the National Magnetic Fusion Energy Computer Center (NMFECC). The workshop was video taped and a copy made available to RSIC. The level of interest in the MCNP Monte Carlo Code System indicates a possible need to distribute the video tapes of the workshop. RSIC invites your comments and suggestions for establishing procedures for making this service possible.

The workshop tapes consist of 25, 50-minute presentations on various aspects of MCNP. General categories include Overview, Introduction to Monte Carlo, Geometry, Data and Physics, Tallies, Variance Reduction Techniques, Input, Output, Coding, and other topics of interest. Although details are not complete, it is anticipated that the Video Workshop will be available on either commercial quality UCA 60, ¾-in. tapes (25 will be required) or VHS 120, ½-in. tapes (4 will be required). It is possible that RSIC may be able to loan a copy to an interested installation or make a copy for an installation which provides blank video tapes. In order to assess the demand for such services, we ask that you complete and return the questionnaire in the back of the newsletter.

CHANGES TO THE COMPUTER CODES COLLECTION

During the month two existing code packages were updated to correct errors in the software and two new code packages were added to the RSIC computer codes collection.

CCC-200/MCNP

This general purpose, continuous-energy, generalized geometry, time-dependent, coupled neutron-photon Monte Carlo transport code system was updated to make changes correcting conditions which in rare instances would give wrong answers. In more frequent instances the program would abort. To correct all of these possibilities, numerous changes were made to both the CDC (A) and IBM (B) versions of the code. During the course of this update, thirteen sample problems were executed at RSIC and the output is included in the package. It is strongly recommended that all persons now using the code send tapes to RSIC and request the corrected version. FORTRAN IV; CDC (A) and IBM (B).

CCC-396/QADMOD-G

This point kernel gamma-ray shielding code

package was updated to correct an error in the cross section listing from Subroutine DATA. The data for nitrogen 1.3 MeV cross section is .0566 rather than .0656. The error was called to the attention of RSIC by Anthony Engle, Texas Utilities Services, Inc., Glen Rose Texas, and verified by Mike Wells, Radiation Research Associates, Ft. Worth, Texas, the contributor. FORTRAN IV; IBM 360/370.

CCC-459/BOLD VENTURE IV

This reactor analysis code system was contributed by Oak Ridge National Laboratory, Oak Ridge, Tennessee. The system can be used to solve nuclear reactor core static neutronics and reactor history exposure problems. First order perturbation and time-dependent sensitivity theories can be applied through the DEPTH/CHARGE system. Control rod positioning may be modeled explicitly and refueling treated with repositioning and recycle. Special capability is coded to model the continuously fueled core and to solve the importance and dominant harmonics problems. References: ORNL-5711, ORNL-5158, ORNL-5062/R1, ORNL-5180, ORNL-5718, ORNL-5376, ORNL-5466, ORNL/CSD-78/R1, ORNL/TM-5887, and LA-6280. FORTRAN IV; IBM 3033.

CCC-460/SPOT1

SPOT1 was contributed by Gilbert/Commonwealth Engineers and Consultants, Reading, PA. It is a gamma-ray kernel integration code system using the method of Ono and Tsuruo to integrate over cylindrical source volumes. The Taylor form of the buildup factor is employed in the integration to compute the gamma-ray dose rate at arbitrary locations outside the source cylinder. Taylor coefficients and buildup factor data are supplied for five materials: water, lead, iron, uranium, and concrete. Reference: Informal User's Manual by J. L. Kamphouse (October 1980). FORTRAN IV and Assembler language; IBM 3033.

CHANGES TO THE SCALE COLLECTION

During the month an existing code package in the SCALE collection was updated.

SCA-03/TRUMP

Information for making this update was supplied by Computer Sciences Division at the Oak Ridge Gaseous Diffusion Plant, Oak Ridge, Tennessee. TRUMP is a code system for transient and steady-state temperature distributions in multidimensional systems. Formatting changes were made to Subroutine TALLY of the IBM version of the code system. The changes were made to increase the number of significant digits for the final temperature solution. The previous limit of 500 surface connectors has now been relaxed through the use of variable dimensioning. Those who are using IBM computers should send a tape and request the updated version. Those who are using the CDC and PRIME versions may request the changes from RSIC. FORTRAN IV; IBM (A), CDC (B), and PRIME 400, 450, and 700 (C).

CHANGES TO THE DATA LIBRARY COLLECTION

During the month a new data library was added to the collection and an existing data library was corrected.

DLC-88/TPASGAM

This radiation decay library of gamma-ray energies, branching ratios, and cross sections was updated to correct an entry in the table ordered by energy. The University of Florida, Gainesville, notified RSIC that values for energy 1780.0 were mispunched. Those who use the code system may contact RSIC to receive details of this correction. PDP-10 and IBM 3033.

DLC-113/VITAMIN-E

This 174-neutron, 38-gamma-ray group cross-

section system based on ENDF/B-V is a contribution of the Oak Ridge National Laboratory. Based on the concept of DLC-41/VITAMIN-C, this system, in AMPX format, can be used to derive problem-dependent cross sections which account for resonance shielding and temperature effects using the Bondarenko method. Cross sections for radiation transport are provided for H-1, H-3, He-4, Li-6, Li-7, Be-9, B-10, B-11, C-12, N-14, O-16, F-19, Na-23, Mg, Al-27, Si, P, S, Cl, Ar, K, Ca, Ti, V, Cr, Mn-55, Fe, Co-59, Ni, Cu, Ga, Y-89, Zr, Nb-93, Mo, Cd, Sn, Cs-137, Gd, Hf-174, Hf-176, Hf-177, Hf-178, Hf-179, Hf-0, Ta-181, W-182, W-183, W-184, W-186, Re-185, Re-187, Au-197, Pb, Th-232, Pa-233, U-233, U-234, U-235, U-236, U-238, Np-237, Pu-238, Pu-239, Pu-240, Pu-241, Pu-242, Am-241, Am-242, Am-242m, Am-243, Cm-242, Cm-243, and Cm-244. In addition, reaction cross sections based on the ENDF/B-V Special Purpose Dosimetry, Activation, and Gas Production files are included in the package. Sample problems are designed to be executed using various modules of PSR-63/AMPX-II or PSR-117/MARS. Data were processed using MINX I.5 for neutron transport cross sections and AMPX modules LAPHNGAS and SMUG for photon production and interaction cross sections. This large data library requires one 6250-bpi or four 1600-bpi tapes for transmittal. Reference: Draft ORNL/RSIC report. IBM 3033.

STANDARDS ACTIONS

The following information on pending and approved standards is provided for your information.

Call for comment is requested by October 6, 1984, for

BSR/ANS-6.4 Guidelines on the Nuclear Analysis and Design of Concrete Radiation Shielding for Nuclear Power Plants (revision of ANSI/ANS-6.4-1977). It is available from ANS for $10.00. Comments should be sent to ANS. The standard provides guidance to architect-engineers, utilities, and reactor vendors responsible for the shielding design of stationary nuclear plants.

The following standard has been approved.

ANSI/ANS-19.5-1978(R1984) Requirements for Reference Reactor Physics Measurements (reaffirmation); date: May 25, 1984.

PERSONAL ITEMS

In serving a specialized area of scientific endeavor, it seems important that we note the movement of people concerned with radiation protection, transport, and shielding in the nuclear industry. We, therefore, continue to carry personal items as they are brought to our attention. During the past month we have been informed of the following changes.

Arnold Futterer retired July of this year from the Ballistics Research Laboratory in Maryland.

James T. Harvey has joined Martin Marietta Energy Systems, Inc., after having served in the Radiological Hygiene Branch of the Tennessee Valley Authority in Vonore, Tennessee.

Sandy Levy has left Thomas Jefferson University Hospital in Philadelphia for the Osteopathic Medical Center of Philadelphia.

David Schabes has left Control Data Corp. in Roseville, Minnesota, to work for Commonwealth Edison in Chicago.

M. L. Sharma has left the Reactor Research Centre in Kalpakkam, India, to begin work at the Rajasthan Atomic Power Project.

Mike Strayer recently left S. Levy, Inc. to join Lockheed, Missiles and Space Co., in Sunnyvale, California.

RSIC Hosts Summer Students

For several years RSIC has been an enthusiastic participant in programs which place college students in a "real" working environment during the summer quarter. In the summer of 1984 it was our pleasure to host three students.

Willie T. Baker, a computer science major from Winston-Salem State University, Winston-Salem, North Carolina, increased his experience with FORTRAN and BASIC on the Data General Eclipse by translating an input processing code from BASIC to interactive FORTRAN.

Vickie J. Fluellen, a mathematics and computer science major from Fort Valley State College, Fort Valley, Georgia, studied and participated in various aspects of RSIC operations including processing incoming requests, recordkeeping, requesting and documenting new codes, new codes testing, updating existing code packages, and filling requests. She became proficient in IBM 3033 Job Control Language.

Alex M. Lemmon, a mathematics major from Southeastern Louisiana University, spent his time here revising the latest version of the ASFIT gamma radiation transport code system to run on the Data General Eclipse S/130. Alex had to restructure the code system

to avoid the very large FORTRAN COMMON block using extended memory, overlays, and increasing disk usage.

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *Jen-Shu Hsieh,* Defense Nuclear Agency, Bethesda, Maryland; *T. Michael Flanders,* Nuclear Effects Laboratory, White Sands Missile Range, New Mexico; *Ivan Fergus,* Bechtel National, Middletown, Pennsylvania; *Herwig Paretzke,* Risk Analysis Group, Inst. f. Strahlenschutz, Fed. Rep. Germany; *I. Remec,* Josef Stefan Inst., Yugoslavia; and *Jack Beharrell,* Goodyear Aerospace, Litchfield Park, Arizona.

Calendar

Your attention is directed to the following events of interest to the radiation shielding and protection community.

October 1984

Conference on Radiation Protection: Standards and Regulatory Issues, October 7–10, 1984, Orlando, Florida, sponsored by Atomic Industrial Forum. Contact: Conference Office, Atomic Industrial Forum, Inc., 7101 Wisconsin Ave., Bethesda, Maryland 20814 (phone 301-654-9260).

International Symposium on High-Dose Dosimetry, October 8–12, 1984, Vienna, sponsored by the IAEA. Contact: Conference Service Section, IAEA, P.O. Box 100, A-1400, Vienna, Austria.

International Conference on Nuclear and Radiochemistry, Ocotber 8–12, 1984, Lindau, Bodensee, F. R. Germany. Contact: Gesellschaft Deutscher Chemiker, Abt. Tagungsorganisation, Postfach 900440, D-6000 Frankfurt-am-Main 90, F. R. Germany.

International Conference on Occupational Radiation Safety in Mining, October 15–18, 1984, Toronto, Ontario, Canada, sponsored by the Canadian Nuclear Assoc., Canadian Dept. of Energy, Mines, and Resources, and the Atomic Energy Control Board. Contact: Internatl. Conf. on Occupational Radiation Safety in Mining, Canadian Nuclear Assoc., 111 Elizabeth St., 11th Floor, Toronto, Ontario, Canada M5G 1P7.

Symposium on Radiation Dosimetry, October 15–18, 1984, Knoxville, Tennessee, sponsored by ORNL. Contact: R. T. Greene, ORNL, P.O. Box X, Bldg. 7710, Oak Ridge, TN 37831-2008 USA.

Meeting of the Nuclear Physics Div. of the American Physical Society, October 18–20, 1984, Nashville, Tenn. Contact: American Physical Society, 335 E. 45th St., New York, NY 10017 USA.

Clinical Radiophysics, a symposium sponsored by the Clinical Radiophysics Section of the Society for Medical Radiology of the German Democratic Republic, October 28–November 1, 1984, Binz (island Rügen, German Democratic Republic). Contact: Dr. sc. techn. Manfred Tautz, 1115 Berlin-Buch, Wiltbergrstrasse 50, Städtisches Klinikum Buch, Spezialabteilung Strahlenphpysik, German Democratic Republic.

International Symposium on the Implementation of the IAEA Codes of Practice and Safety Guides for Nuclear Power Plants, October 29–November 2, 1984, Vienna. Contact: Conf. Svc. Sect., IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Biological Effects of Ionizing Radiation, a course offered by the Harvard school of Public Health, Office of Continuing Education, October 30–November 1, 1984. Contact: Office of Continuing Education, Harvard School of Public Health, 677 Huntington Ave., Boston, MA 02115 (phone 617-732-1171).

Nuclear Power Systems Symposium, October 31–November 2, 1984, Orlando, Florida, sponsored by the Institute of Electrical and Electronics Engineers. Contact: D. Louis Costrell, National Bureau of Standards, C333 Radiation Physics, Washington, DC 20234 (phone 301-921-2518).

Nuclear Science Symposium, October 31–November 2, 1984, Orlando, Florida. Contact: L. C. Oakes, Oak Ridge National Lab., P.O. Box X, Oak Ridge, TN 37831 (phone 615-574-5527).

November 1984

National Conference on Biomedical Physics and Engineering November 3–4, 1984, in Sofia, Bulgaria, sponsored by the Bulgarian National Society of Biomedical Physics and Engineering. Contact: Chair of Physics and Biophysics, c/o eng. Peter Trindev, Medical Academy - Base No. 1, 1431 Sofia / 1 Boul. G.Sofiiski, Bulgaria.

Inter-Regional Seminar on Practical Problems Encountered in the Safe Transport of Radioactive Materials, November 5–8, 1984, Vienna. Contact: Conf. Svc. Sect., IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Radioactive Waste Management for Nuclear Power Facilities, a short course offered by Technical Seminars, Inc., November 5–8, 1984, in Atlanta, Georgia. Contact: Program Administrator, TSI, 425 Northern Blvd., Great Neck, NY 11021 (phone 516-829-3787).

Joint Meeting of the American Nuclear Society, the Atomic Industrial Forum, and the European Nuclear Society, November 11–16, 1984, Washington. Contact: George W. Cunningham, Nuclear Studies, Mitre Corp., 1820 Dolly Madison Blvd., McLean, Virginia 22102 USA.

Safety of Radioactive Waste Management, November 12–13, 1984, Cologne, F. R. Germany, sponsored by the Society for Reactor Safety. Contact: Gesellschaft für Reaktorsicherheit (GRS) mbH, Schwertnergasse 1, Postfach 10 16 50, D-5000 Köln 1, F. R. Germany.

8th Conference on the Applications of Accelerators in Research and Industry, November 12–14, 1984, Denton, Texas, sponsored by North Texas State University. Contact: Accelerator Conference, Physics Dept., North Texas State Univ., Box 5368, Denton, TX 76203-5368.

Criticality Accident Dosimetry, November 12–16, 1984, a course conducted at the Dosimetry Applications Research Facility at the Oak Ridge National Laboratory, Oak Ridge, Tennessee. Contact: R. E. Swaja or C. S. Sims, ORNL, P.O. Box X, Bldg. 7710, Oak Ridge, TN 37831 (phone 615-574-5851).

International Conference on Power Plant Simulation, November 19–21, 1984, Cuernavaca, Mexico, sponsored by the Instituto de Investigaciones Eléctricas, Mexico, with the consponsorship of the Nuclear Regulatory Commission (NRC). Contact: for USA and Canada; David Hetrick, Dept. of Nuclear and Energy Engineering, Univ. of Arizona, Tucson, AZ 85721; and for other countries, Dra. elia Méndez, Instituto de Investigaciones Eléctricas, Depto. de Simulaciòn, Leibnitz 14, 3er, piso, Co. Anzures, 11590, Mexico, D. F.

International Conference on Fusion Reactor Materials, November 19–22, 1984, Tokyo, Japan, sponsored by the Atomic

Energy Society of Japan, Iron and Steel Institute of Japan, Japan Institute of Metals, and Japan Society of Applied Physics. Contact: R. R. Hasiguti, Science Univ. of Tokyo, Faculty of Engineering, Kagurazaka, Shinjuku-ku, Tokyo 162 Japan.

International Symposium on Assessment of Radioactive Contamination in Man, November 19–23, 1984, Paris, sponsored by the International Atomic Energy Agency. Contact: Conf. Svc. Sect., IAEA, P.O. Box 100, A-1400 Vienna, Austria.

Conference on Radioactive Waste Management, November 27–29, 1984, London, sponsored by the British Nuclear Energy Society. Contact: The Secretariat, British Nuclear Energy Society, at the Institution of Civil Engineers, 1-7 Great George St., London SWIP 3AA, UK.

Civilian Radioactive Waste Managment Information Meeting, November 27–29, 1984, Chicago, Illinois, sponsored by the Department of Energy. Contact: Gary L. Pitchford, Office of Communications, DOE Chicago Operations Office, 9800 S. Cass Ave., Argonne, IL 60439 (phone 312-972-2013).

December 1984

1st International Conference on Fusion Reactor Materials (ICFRM-1), December 3–6, 1984, Tokyo, sponsored by Atomic Energy Society of Japan, Iron and Steel Institute of Japan, Japan Institute of Metals, Japan Society of Applied Physics, the American Nuclear Society, and others. Contact: R. R. Hasiguti, The Science University of Tokyo, Faculty of Engineering, Kagurasaka, Shinjuku-ku, Tokyo 162, Japan.

Executive Conference: There Are Dollars and Sense in Good Radiation Protection Management, December 9–12, 1984, San Diego, California, sponsored by the American Nuclear Society. Contact: Carl Giesler, General Chairman, Wisconsin Public Service Co., 700 N. Adams, Box 1200, Green Bay, WI 54305 (phone 414-433-1306) or W. C. Hopkins, Technical Program Chairman, Bechtel Power, 15740 Shady Grove Rd., Gaithersburg, MD 20760 (phone 301-258-3000).

January 1985

Environmental Radiation, (18th Mid-Year Topical Meeting of the Health Physics Society), January 7–10, 1985, Colorado Springs, Colorado. Contact: R. J. Burk, Jr., Health Physics Society, 4720 Montgomery Lane, Suite 506, Bethesda, MD 20014.

International Symposium on Radioactivity, January 8–12, 1985, Pune, India, to commemorate the 50th anniversary of the discovery of artificial radioactivity. Contact: H. J. Arnikar, Convenor, ISR, Chemistry Dept., Univ. of Poona, Pune 411 007, India.

2nd Symposium on Space Nuclear Power Systems, January 14–16, 1985, Albuquerque, New Mexico. Contact: Mohamed S. El-Genk, 2nd Symp. Space Nuclear Power Systems, Chem/Nucl. Engr. Dept., FEC 239, Univ. of New Mexico Campus, Albuquerque, NM 87131.

Radiological Protection Measurements and Their Traceability, meeting and exhibition, January 22, 1985, London, sponsored by the Society for Radiological Protection. Contact: J. H. Martin, Dept. of Medical Biophysics, Blackness Lab., Univ. of Dundee, Dundee DD1 4HN, Scotland, UK.

February 1985

International ANS/ENS Topical on Probabilistic Safety Methods and Applications, February 24–28, 1985, San Francisco. Contact: Chauncey Starr, EPRI, 3412 Hillview Ave., Palo Alto, CA 94303 (phone 415-855-2121).

March 1985

Symposium on Radioactive Waste Management 85, March 24–28, 1985, Tucson, Arizona, sponsored by Univ. of Arizona, U.S.-DOE, ANS, Electric Power Research Institute, American Society of Mechanical Engineers. Abstract deadline is September 20, 1984. Contact: Roy G. Post, General Chairman, Waste Management 85, College of Engineering, Univ. of Arizona, Tucson, AZ 85721.

Annual Meeting of the Atomic Energy Society of Japan, March 28–30, 1985, Tokyo. Contact: Minoru Masamoto, Secretary General, Atomic Energy Society of Japan, No. 1-1-13 Shimbashi, Minato-ku, Tokyo 105 Japan.

April 1985

21st Annual Meeting of the National Council on Radiation Protection and Measurements (NCRP), april 3–4, 1985, Washington, D. C. Contact: NCRP, 7910 Woodmont Ave., Suite 1016, Bethesda, Maryland 20814 (phone 301-657-2652).

International Meeting on Advances in Nuclear Engineering and Computational Methods, April 9–11, 1985, Knoxville, Tennessee, sponsored by ANS, European Nuclear Society (ENS), Atomic Energy Society of Japan. Contact: H. L. Dodds, 12629 Red Fox Drive, Knoxville, TN 37922 (phone 615-974-2525) or R. M. Westfall, ORNL, P.O. Box X, Oak Ridge, TN 37831 (phone 615-574-5267).

Fast Reactor Safety, April 21–24, 1985, Knoxville, Tennessee, sponsored by the ANS, ENS. Contact: George Flanagan, Oak Ridge National Laboratory, P.O. Box X, Bldg. 6025, Oak Ridge, TN 37831 (phone 615-574-6155).

General Meeting of the American Physical Society, April 25–27, 1985, Washington. Contact: The American Physical Society, 335 East 45th St., New York, NY 10017.

Tritium Technology in Fission, Fusion and Isotopic Applications, April 30–May 2, 1985, Dayton, Ohio. Contact: H. F. Anderson, Process Engr. Eval. & Control, Monsanto Mound Facility, P.O. Box 32, Miamisburg, OH 45342 (phone 513-865-4020).

June 1985

25th Annual International Conf. of the Canadian Nuclear Association and 6th Annual Conf. of the Canadian Nuclear Society, June 2–5, 1985, Ottawa, Ontario, Canada. Contact: J. A. Weller, General Manager, Canadian Nuclear Association, 111 Elizabeth St., 11th Floor, Toronto, Ontario, Canada M5G 1P7.

Annual Meeting of the American Nuclear Society, June 9–14, 1985, Boston, Massachusetts. Contact: David G. Pettengill, ANS Meeting Manager, American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60535.

August 1985

SMIRT-8, August 19–23, 1985, Brussels, Belgium. Contact: Sergio Finzi, CEC - Directorate Gen., X11-JRC, Brussels, Belgium.

AUGUST 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 22161.

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.

COMPUTER CODES LITERATURE

CONF-830538, Vol. II, 636-645 ..... PO3-9; PO3-II; BLANK; ANISN; MOCDIF
Neutron-Physical Calculation of Blanket and Shield of Fusion Reactor., . . Ilyushkin, A.I.; Linge, I.I.; Mashkovich, V.P.; Sakharov, V.K.; Shikin, A. V.; Kashirskij, A.V.; Shatalov, C.E., . . Physical Engineering Institute, Moscow; I.V. Kurchatov Institute of Atomic Energy, Moscow, USSR, . . 1983

CONF-830538, Vol. II, 646-654 ..... SWAN
On Optimal Shields for Fusion Reactors., . . Gilai, D.; Greenspan, E.; Levin, P., . . Nuclear Research Center - Negev, Israel, . . 1983

CONF-830538, Vol. II, 675-684 ..... MORSE; MACKLIB-IV; VITAMIN-C
An Effective Penetration Shield Design for ICF Reactors., . . Sawan, M.E.; Vogelsang, W.F.; Sze, D. K., . . University of Wisconsin, Madison, Wisconsin, . . 1983

CONF-830538, Vol. II, 685-694 ..... MCNP
U.S. INTOR Radiation Shield Design., . . Gohar, Y.; Abdou, M.A., . . Argonne National Laboratory, Illinois, . . 1983

CONF-830538, Vol.II, 704-713 ..... ANISN; DOT 3.5; MORSE; THIDA; GICX40
Nuclear Analysis of Blanket and Shield Design for Tokomak Fusion Experimental Reactor., . . Mori, S.; Mohri, K.; Seki, Y.; Kawasaki, H., . . Kawasaki Heavy Industries, Ltd., Tokyo, Japan; Japan Atomic Energy Research Institute, Ibaraki, Japan; Century Research Center Corporation, Tokyo, Japan, . . 1983

CONF-830538, Vol. II, 714-720 ..... McBEND; DICE; EURLIB
Shielding of the Neutral Injector Beam Line in the Culham Conceptual Tokomak Reactor MK II., . . Avery, A.F.; Morrison, C.A.; Parry, C., . . Atomic Energy Establishment, Winfrith, Dorchester, Dorset, UK; Imperial College of Science and Technology, London, UK, . . 1983

CONF-830538, Vol. II, 721-730 ..... PALLAS; ANISN; SKYSHINE II
Nuclear Radiation Analysis in Reacting Plasma Facility., . . Ogawa, Y.; Naitou, H.; Shin, K.; Hyodo, T., . . Institute of Plasma Physics, Nagoya University, Nagoya, Japan; Kyoto University, Kyoto, Japan, . . 1983

CONF-830538, Vol. II, 731-740 ..... McBEND; ORIGEN; RANKERN
Shielding Calculations for the Joint European Torus., . . Avery, A.F.; Davies, N.; Jakeman, D.; Page, R.W., . . Atomic Energy Establishment, Winfrith, Dorchester, Dorset, UK, . . 1983

CONF-830538, Vol. II, 741-750 ..... DOT 3.5; ANISN; MORSE; DOT III; PALLAS-2DCY-FC; AIDA; MORSE-I
Development of Radiation Transport Code in Axisymmetric Toroidal Geometry for Nuclear Design of Fusion Reactor., . . Ida, T.; Kondo, S.; Togo, Y., . . University of Tokyo, Tokyo, Japan, . . 1983

CONF-830538, Vol. II, 751-758 ..... ANISN
Analytical Calculations of 3-D Flux Distributions

Based on 1-D and 2-D Transport Calculations., . . Warnemunde, R.; Denk, W.; Hesse, U., . . Kraftwerk Union AG, Erlangen, FRG; Gesellschaft fur Reaktorsicherheit, Garching, FRG, . . 1983

CONF-830538, Vol. II, 759-768 . . . . . MORSE-ALB; SLDN; ANISN-T; AMC; RESPNS; DOMINO-N Application of Albedo Monte Carlo Method to FBR Neutron Streaming Analysis., . . Kawai, M.; Hayashida, Y.; Yamauchi, M., . . Nippon Atomic Industry Group Co., Ltd., Kawasaki, Japan, . . 1983

CONF-830538, Vol. II, 779-786 . . . . . PALLAS-XYZ Analysis of Neutron Streaming Through Void Duct with Three-Dimensional Transport Code PALLAS-XYZ., . . Sasamoto, N.; Takeuchi, K.; Kanai, Y., . . Japan Atomic Energy Research Institute, Ibaraki, Japan; Ship Research Institute, Ibaraki, Japan, . . 1983

CONF-830538, Vol. II, 787-796 . PALLAS; MORSE Study on Additional Shields for Gamma-Rays Streaming Through a Duct., . . Miura, T.; Takeuchi, K.; Kinno, M., . . Ship Research Institute, Ibaraki, Japan; Fujita Corporation, Yokohama, Japan, . . 1983

CONF-830538, Vol. II, 805-816 . . . . . McBEND; MULTISORD; RANKERN The Development of a Calculational Route for PWR Cavity Streaming., . . Davies, N.; Miller, P.C.; Dutton, L.M.C.; Smith, P.N., . . Atomic Energy Establishment, Winfrith, Dorchester, Dorset, UK; National Nuclear Corporation Limited, Whetstone, Leicester, UK, . . 1983

CONF-830538, Vol. II, 817-826 . . . . . MORSE; DOT; ANISN-E; DOT 3.5-E; AUSLIB; DOMINO; DOT 4.2; AUSDOT Reactor Cavity Radiation Streaming Analysis and Shielding Solutions for the ENEL PWR Reference Plant., . . Barbucci, P.; Di Pasquantonio, F.; Guidi, L.; Mariotti, G., . . ENEL, Centro di Ricerca Termica e Nucleare, Pisa, Italy, . . 1983

CONF-830538, Vol. II, 827-834 . . . . . DOT 3.5; JSD100; ANISN; DOQ; ADOQ Neutron Streaming Along Narrow Gaps in VHTR Core., . . Suzuki, I.; Watanabe, T.; Tanaka, Y.; Doi, T. Hirano, M., . . Kawasaki Heavy Industries, Ltd., Tokyo, Japan; Japan Atomic Energy Research Institute, Tokai, Japan, . . 1983

CONF-830538, Vol. II, 852-861 . . . . . TRIDENT-CTR; MCNP Evaluation of the Streaming Matrix Method for Discrete-Ordinates Duct Streaming Calculations., . . Clark, B.A.; Urban, W.T.; Dudziak, D.J., . . Los Alamos National Laboratory, Los Alamos, NM, . . 1983

CONF-830538, Vol. II, 862-870 . . . . . MCNP Radiation Streaming in Diagnostic Penetrations., . . Engholm, B.A.; Battaglia, J.M.; Baur, J.F., . . GA Technologies, Inc., San Diego, CA, . . 1983

CONF-830538, Vol. II, 871-879 . . . . . MORSE-CG; AMPX-II; G-33; ANISN Simulated 3-Dimensional Radiation Streaming Through Straight Concrete Duct., . . Kadotani, H.; Narita, J.H.; Kawasaki, H.; Iwasa, N.; Ishitsuka, T.; Fukano, Y.; Clifford, C.E., . . Century Research Center Corporation, Tokyo, Japan; Princeton University Plasma Physics Laboratory, Princeton, New Jersey, . . 1983

CONF-830538, Vol. II, 880-887 . . . . . MORSE-CG; RADHEAT-V3; ANISN Fast Neutron Streaming Studies Using the Fast Neutron Source Reactor, YAYOI and a 14 MeV Neutron Generator., . . Hashikura, H.; Oka, Y.; Akiyama, M.; An, S., . . University of Tokyo, Ibaraki, Japan, . . 1983

MCNP Workshop Video Tape Questionnaire

If you are interested in the MCNP Workshop Video Tapes, please complete and return this form to:

Radiation Shielding Information Center
Oak Ridge National Laboratory
P.O. Box X, Bldg. 6025
Oak Ridge, TN 37831

NAME:_____ MCNP Application:_____

INSTALLATION:_____

ADDRESS:_____

_____

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_____

PHONE NUMBER: (COMMERCIAL)_____ FTS_____

Are you interested in obtaining a copy of the tapes? Yes____ No____

Are you interested in borrowing a copy of the tapes? Yes____ No____

Specify preference for: (1)25, UCA 60 tapes*____

(2)4-VHS 120 tapes**____

(3)Other_____

*UCA 60 tapes are 60-min commercial quality 3/4-in tapes and 25 are required for the entire workshop.

**VHS 120 tapes are 6-hr, 1/2-in. tapes and four are required for the entire workshop.