

RSIC Newsletter



RADIATION SHIELDING INFORMATION CENTER

OAK RIDGE NATIONAL LABORATORY

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

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You must have long-range goals to keep you from being frustrated by short-range failures.

... Charles C. Noble

A NEW YEAR BEGINS

A new year begins – the first of a new decade – RSIC's 18th year of interaction with the international radiation transport and shielding research and development community. Only you, the user community, can evaluate how effectively RSIC has supported your efforts throughout the 18 years to advance the state-of-the-art to do competent, quality work in our field. We have worked diligently to that end. And, we have never worked in a vacuum. Your cooperation and your collaboration in RSIC activities, the sharing of the results of your work, and your encouragement have contributed much to our viability. We thank you.

Each year, our central bulletin board proudly displays the New Year's Greetings you extend from around the world. This year, the volume received extended the display to a second board. We enjoy them – and share them – and save them for our archives. We are pleased at your taking the time to wish us well at this, the beginning of a new year.

May 1980 bring to each of our readers good health, happiness, and success in your work. We resolve to dedicate our efforts anew to keep RSIC viable in your service.

The Staff

ANS SPECIAL AWARD IN 1980

The American Nuclear Society will make a Special Award in 1980 for "Outstanding Contributions in the Field of Radiological Environmental Protection and Control." The intent of this award is to recognize significant contributions in the development and progress in this particular field of effort associated with nuclear energy development. This award can be made to either an individual or a group and the recipient need not be from within ANS. The award, in the form of an engraved certificate and a check in the amount of \$1,000, will be presented at the Awards luncheon at the ANS Annual Meeting in Las Vegas, Nevada on June 10, 1980.

Letters of nomination for the award should be sent to Octave J. DuTemple, Executive Director, American Nuclear Society, 555 North Kensington Avenue, LaGrange Park, Illinois 60525, prior to the deadline on April 1, 1980. The nominee's name, title or position, business and home address, date and place of birth, and education should be given. His/her contribution to the topic area should be described in a separate document and 15 copies should be submitted.

ANS-6 STANDARDS PROGRESS REPORT

At the winter meeting of the American Nuclear Society in November, the progress during 1979 of ANS-6, Radiation Protection and Shielding, was reviewed by the subcommittee.

Early in the year two publications were issued by ANS: (1) "Trial Use Nuclear Glossary," consisting of *Glossary of Terms in Shielding and Dosimetry*, prepared by ANS-6.5, *Definitions of Reactor Physics Terms and Parameters*, prepared by ANS-19.2, and *Power Reactor Systems Committee Glossary of Definitions and Terminology*, prepared by ANS-50, and (2) ANSI/ANS-6.6.1, "Calculation and Measurement of Direct and Scattered Gamma-Radiation from LWR Nuclear Power Plants."

Two proposed standards have been balloted by ANSI committees and the working groups are responding to comments. These are: ANSI/ANS-6.3.1, "Program for Testing Radiation Shields in Light Water Reactors" and ANSI/ANS/HPSSC-6.8.1, "Location and Design Criteria for Area Radiation Monitoring Systems for Light Water Nuclear Reactors."

One proposed standard was approved by ANS-6: ANSI/ANS-6.7.1, "Radiation Zoning for Design of Nuclear Power Plants."

Two drafts were released by the working groups for review and feedback. These were: ANSI/ANS-6.1.2, "Neutron and Gamma-Ray Cross Sections for Nuclear Radiation Protection Calculations" and "Specifications for One-Dimensional Light Water Reactor (LWR) Shielding Benchmark." Copies of these are available upon request from the chairman of ANS-6, D. K. Trubey at RSIC.

Working Group 6.4 has continued work on a standard for compensatory materials, i.e. special shielding materials used to compensate for gaps or ducts in bulk shields.

To improve the interface with ANSI committee N13, Radiation Protection, D. K. Trubey was appointed alternate ANS representative. Eric Clarke, Technical Operations, Inc., is ANS representative.

PWR SHIELDING BENCHMARK PROBLEM SPECIFICATIONS AVAILABLE

Jacob Celnik of Burns and Roe, Inc., Chairman of the ANS standards working group on Shielding Benchmark Problems, ANS-6.2, has asked RSIC to distribute the specifications for two PWR benchmark problems. They are identified as "One-Dimensional PWR Analysis Problem No. 1" and "One-Dimensional PWR Analysis Problem No. 2."

The objective of the proposed benchmark problem is to provide a documented specification and format to permit intercomparisons of state-of-the-art computational methodologies. It is anticipated that the results will be compared with experimental data when they become available.

Computational techniques "tested" with these benchmarks will be used to:

- a) Evaluate adequacy of specific cross-section data sets, in conjunction with ANS 6.1.2.
- b) Determine fluence levels at the reactor pressure vessel, to assist in calculating radiation induced changes in its mechanical properties. The one-dimensional results will be compared to more refined two-dimensional calculations.
- c) Assist in evaluating various computational techniques and parameters which are important to reactor cavity streaming analyses.

The specified problems have a common objective of calculating the radiation levels at specific locations in a one-dimensional LWR representation, at core midplane. This set contains two variations of a PWR problem and submitted solutions may be for either, or both, problems.

Individuals submitting solutions have the freedom to use any geometric model and calculational approach desired. However, solutions should contain detailed descriptions of the approach and appropriate calculational parameters.

For consistency, all parameters required for problem specification are defined. These include geometry, nuclear densities, power distribution and power level.

RSIC will make copies of the specifications available upon request. Solutions should be submitted to Jacob Celnik for analysis by the working group. When sufficient results are available, the working group will be able to determine the state-of-the-art solution to be published.

CHANGES IN THE COMPUTER CODE COLLECTION

The following changes were made in December.

PSR-145/FERRETT

FERRETT, a least-squares solution to nuclear data and reactor physics problems, contributed by Hanford Engineering Development Laboratory, Richland, Washington, provides a way to combine related

measurements and calculations in a consistent evaluation. Basically a very general least-squares code, it is oriented towards problems frequently encountered in nuclear data and reactor physics. A strong emphasis is on the proper treatment of uncertainties and correlations and in providing quantitative uncertainty estimates. Reference: HEDL-TME 79-40. FORTRAN IV; UNIVAC.

SCALE-07/KENO-IV-CG

KENO-IV-CG, contributed by UCND Computer Sciences Division at Oak Ridge National Laboratory, was developed to merge the simple geometry input description utilized by combinatorial geometry with the repeating lattice feature of the original SCALE-02/KENO-IV geometry package. The result is a criticality code with the ability to model a complex system of repeating rectangular lattices inside a complicated three-dimensional geometry system. Furthermore, the combinatorial geometry routines were modified to differentiate between combinatorial zones describing a particular KENO BOX to be repeated in a KENO array and those combinatorial zones describing geometry external to an array. This allows the user to maintain a simple coordinate system without any geometric conflict due to spatial overlap. Reference: NUREG/CR-0709, ORNL/NUREG/CSD-7. FORTRAN IV and assembler language; IBM 360.

SCALE-08/CESAR

The Critical Experiment Storage and Retrieval code package (CESAR) was contributed by UCND Computer Sciences Division, Oak Ridge National Laboratory. It is a part of the Standardized Cask-Analysis for Licensing Evaluation (SCALE) project to standardize methods for performing safety analyses. CESAR compiles a library of card-image input data for analyzing critical experiments. A collection of input data for 116 critical experiments is included in the package. Reference: Informal notes. FORTRAN IV; IBM 360.

CHANGES IN THE DATA LIBRARY COLLECTION

The following changes were made in December.

DLC-34/LENDL

The LENDL data package has been updated with the addition of the 1978 version of the Livermore Evaluated Nuclear Data Library in ENDF/B-IV format. Neutron, secondary gamma-ray production, and gamma-ray interaction cross sections are provided for most elements in the range from $Z=0$ to 98. Some differences exist between the LENDL format and ENDF/B. For example, LENDL has a lower energy limit of $1.0E^{-4}$ eV versus $1.0E^{-5}$ for ENDF/B, and secondary angular distributions for isotropic processes are not explicitly included. The updated version is denoted DLC-34C. No retrieval code is provided. Reference UCRL-50400, Volume 15, Part A, Part B (Rev. 1), Part C, and Part D (Rev. 1).

DLC-69/ACTL

ACTL, an evaluated neutron activation cross-section library covering incident neutron energies from 10^{-10} to 20 MeV, was contributed by Lawrence Livermore Laboratory, California. The library contains evaluated activation cross sections for 233 ground-state target isotopes as well as for 22 isomeric targets. The evaluations have been done for specific first-order reactions (where the targets are stable isotopes of an element) and for the related second-order reactions (where the targets are the immediate activation products from reactions on these stable isotopes). Consequently, a large number of cross sections are provided for unstable targets. Cross sections are usually included for the following reactions: (n,γ) , $(n,2n)$, $(n,3n)$, (n,p) , $(n,n'p)$, (n,pn) , (n,α) , $(n,n'\alpha)$, and $(n,\alpha n)$. Some (n,d) , (n,t) , $(n,^3\text{He})$, $(n,n'd)$, and $(n,n't)$ cross sections are also provided. On the average, about five reactions per target isotope have been evaluated. Cross sections for reactions leading to isomeric products are included where appropriate. Reference: UCRL-50400, Vol. 18.

DLC-70/JENDL-1

JENDL-1, a Japanese Evaluated Nuclear Data Library was contributed by Japan Atomic Energy Research Institute, Tokai-mura, Naka-gun, Ibaraki-ken, Japan. The library includes 72 nuclides, most of which are needed for the study of fast breeder reactors. Nuclides were excluded from JENDL-1 in cases

where ENDF/B-IV data for these nuclides were judged to be better than JENDL. Data of some quantities for almost all nuclides were estimated from the calculations with nuclear model codes. These quantities are background cross sections in the resonance region, inelastic scattering cross sections for each excited level of the residual nucleus, angular distributions of elastically scattered neutrons, and some of the threshold reaction cross sections. The data format of JENDL-1 is the same as that of ENDF/B, thus, most of the data-processing codes for ENDF/B are available to JENDL-1. Reference: JAERI-1261.

NAIG CURRENT WORK AND PROBLEMS

Ichiro Komatsu of the **Nippon Atomic Industry Group (NAIG) Co., Ltd.** has sent to RSIC a statement of activities of the NAIG Nuclear Research Laboratory in the field of radiation shielding. The list includes recent activities and their documentation over a 3-year period and the computing methods used. Principal scientists include **Masaru Nakai** (Shielding Unit Manager), who is mainly involved in experimental shielding studies and in shielding design of nuclear power plants, and **Mashayoshi Kawai** (Shielding Unit Engineer), who is engaged in theoretical shielding studies and in the evaluation of nuclear cross sections.

We welcome such information from the international shielding community and are pleased to publish the NAIG summary.

Recent Activities at the NAIG Nuclear Research Laboratory

A. Theoretical Study in the Field of Radiation Shielding, M. Kawai, *et al.*

1. Sn Transport Calculations

- (a) Codes: 1D—ANISN-W; and 2D—TWOTRAN-GG (NAIG improved version) and TWOTRAN-GG-PNVW.
- (b) Activities: Shielding Calculations of FBR, BWR, and Fusion Reactor; and Analysis of Gamma-Ray Skyshine.
- (c) Recent Publications
 - (1) M. Kawai, *et al.*, "Two-Dimensional Shielding Benchmark Calculations by Discrete Ordinates and Monte Carlo Code No.1," JAERI-M 7799 (1978), (in Japanese).
 - (2) M. Kawashima, *et al.*, "Analysis of the Experiments on Main Shield of Experimental Reactor Joyo," 1979 Annual Meeting of the Atomic Energy Society of Japan, F 45, (in Japanese).
 - (3) M. Nakai, *et al.*, "Study on Estimation of Gamma-Ray Skyshine Dose from Radioactive Waste Storage Building," NAIG Ann. Rev. (1978) p.27.

2. Monte Carlo Calculations

- (a) Code: MORSE-ALB (improved version of MORSE-CG, AMC method).
- (b) Activities: Analysis of Duct Streaming Problem in FBR and BWR.
- (c) Recent Publications
 - (1) M. Kawai, *et al.*, "A Study on Applicability of An Albedo Monte Carlo Method for Neutron Streaming Calculation," Proceedings of Fifth International Conference on Reactor Shielding, p.636 (1977).
 - (2) M. Kawai, *et al.*, "Analysis of Shielding Experiments on Neutron Streaming Through Sodium Duct With Albedo Monte Carlo Method," NAIG Ann. Rev. (1978) P.29.
 - (3) M. Kawai, *et al.*, "Improved Streaming Analysis Technique With Monte Carlo Method," PNC reports. (1979) (in Japanese).

3. Cross-Section Sensitivity Studies

- (a) Codes: SWANLAKE (ANISN-W), ROSETTA-1D (ANISN-JR), ROSETTA-2D (DOT-JR), and in cooperation with JAERI, SENS-TWO (TWOTRAN).
- (b) Activities: Analysis for Sensitivity of Cross Sections.
- (c) Recent Publications
 - (1) M. Yamauchi, *et al.*, "Sensitivity Analysis of Neutronics Calculation in the Preliminary Design of Japan Experimental Fusion Reactor," JAERI-M 7915 (1979) (in Japanese).
 - (2) M. Kawai, *et al.*, "Problems in Iron Cross Section on Shielding Analysis," JAERI-M 8163 (1979) (in Japanese).
 - (3) M. Kawai, *et al.*, "Development of Two-Dimensional Shielding Sensitivity Analysis Code, ROSETTA-2D," 1979 Ann. Meet. of the Atomic Energy Society of Japan, (in Japanese; to be published by JAERI).
 - (4) M. Yamauchi, *et al.*, "Two-Dimensional Sensitivity Studies Code, SENSTWO," JAERI-M (to be published in Japanese).
 - (5) M. Yamauchi, *et al.*, "Applicability of a Two-Dimensional Sensitivity Calculation Code, SENSTWO," (submitted to *J. Nucl. Sci. Tech.*).
 - (6) M. Yamauchi, *et al.*, "Study on the Application of Cross-Section Sensitivity Analysis to FBR Shielding Design Calculations," PNC reports (1979) (in Japanese).

4. Shielding Constants

- (a) Codes: RADHEAT-V3 System and SLDN.
- (b) Activities: calculation of albedo data by SLDN code (comparing with experimental values), analysis of shielding benchmark experiments; and a study on estimation of atomic displacement cross sections.

B. Shielding Experiments, M. Nakai, *et al.*

- 1. Source: Toshiba Training Reactor (100kw, swimming pool type) ^{252}Cf neutron source.
- 2. Instruments: Dosimetry by TLD, survey meter and glass dosimeter mixed with cobalt (NAIG developed); gamma-ray spectroscopy by NaI and Ge, neutron spectroscopy by ^3He counter and foil detectors.
- 3. Benchmark experiments for duct streaming.

C. Nuclear Data Evaluation, S. Iijima, *et al.*

- 1. Activities as members of Japanese Nuclear Data Committee: evaluation of neutron cross section for JENDL-2 FPND, Fe, ^{236}U , ^{239}Pu , ^{240}Pu , ^{242}Pu ; and estimation of photon production cross sections.
- 2. Recent Publications
 - (a) JAERI-M8163, Proc. of the 1978 Seminar on Nuclear Data, paper No. 10, 13, 15, 19, 21, (in Japanese).
 - (b) T. Murata, *et al.*, "Level Scheme for Some Fission Product Nuclides," JAERI-M 7734 (1978).

The NAIG Nuclear Research Laboratory also publishes an Annual Review in English. Interested persons may make inquiry as to its availability to Eiji Inaba, Director, Nippon Atomic Industry Group Co., Ltd., 13-12, Mita 3-Chome, Minato-ku, Tokyo, Japan.

PERSONAL ITEMS

Aron Dubi has joined the staff of the Department of Nuclear Engineering, Ben Gurion University of the Negev, Beer Sheva, Israel following several months with the European Shielding Information Service (ESIS), Euratom in Ispra, Italy and a year's stay at the Los Alamos Scientific Laboratory, New Mexico.

David H. Berwald has accepted a position with the TRW Energy Systems Group at One Space Park, Redondo Beach, CA as Technical Program Manager for Fusion-Fission Hybrids.

We regret to learn from **Prof. Dr. H. Schultz** of ATS, Hannover Technical University, of the death in November of ATS staff member (19 years) and long-term RSIC participant, **Dr. Werner Futtermenger**.

David R. Vondy of the ORNL Engineering Physics Division and **John Lewellen** of DOE Reactor Physics participated in November meetings of specialists on neutronics calculational methods (DOE/CEA/BMFT) at KFK (Karlsruhe, FRG) and on calculation of three-dimensional rating distributions in operating reactors (OECD NEACRP; Paris, France), and in a discussion at KFA, Juelich of USA/FRG technical information exchange on thermal (HTR) reactors.

The following changes of address have been noted: **Robert T. McGrath** from EXXON Research & Engineering, Linden, NJ to Department of Nuclear Engineering, University of Michigan at Ann Arbor; **Michael P. R. Waligorski** from University of Nebraska-Lincoln to Instytut Fizyki Jadrowej W Krakowie, Krakow, Poland; **G. Evangelides** from Imperial College, London, England (UK) to Science Research Council, Daresbury Laboratory, Keckwich Lane, Daresbury, Warrington; and **L. J. Perkins** from The University of Birmingham, England (UK) to IRT Corporation, San Diego, CA.

VISITORS TO EPIC

The following persons came for an orientation visit and/or to use EPIC facilities during the month of December.

C. E. Clifford, Radiation Research Associates, Fort Worth, TX; Atsuo Ishimori, Burroughs Co., Ltd., Tokyo, Japan; Masahide Iwasaki and Shogo Sugihara, Japan Information Processing Service Co., Ltd., Tokyo, Japan; David Johnson, OECD NEA Data Bank, Paris, France; Masato Takagi, Toyo Engineering Corporation, Chiba, Japan; and Santiago Valverde, IPEN, Sao Paulo, Brazil.

UPCOMING MEETINGS

We call attention to the following upcoming meetings.

February 1980

The Public Affairs and Information Program's INFO '80, February 24-27, 1980, the Copley Plaza Hotel, Boston, MA. Contact: Atomic Industrial Forum, Inc., 7101 Wisconsin Avenue, Washington, D.C. 20014; Telephone 301-654-9260.

April 1980

Seminar-Workshop on Theory and Application of Monte Carlo Methods, April 21-23, 1980, Oak Ridge, TN. Contact: Radiation Shielding Information Center, Oak Ridge National Laboratory, P. O. Box X, Oak Ridge, TN 37830; Telephone 615-574-6176, FTS 624-6176.

HAROLD O. WYCKOFF IS FOURTH TAYLOR LECTURER

The National Council on Radiation Protection and Measurements (NCRP) announced today that Harold O. Wyckoff has been selected to give the fourth Lauriston S. Taylor Lecture on Radiation Protection and Measurements. The lecture series honors a man who retired from the Presidency of the NCRP in March 1977, after more than 47 years of service. Dr. Wyckoff's selection as a Lauriston S. Taylor Lecturer is particularly fitting because of his long association with him at the National Bureau of Standards and in the ICRU and NCRP.

The lecture will be given in the auditorium of the National Academy of Sciences (2100 Block of C Street, N.W., Washington, D.C.) at 4:00 p.m. on April 2, 1980, on the occasion of the Annual NCRP Meeting. Members of the public are invited to join the members of the Council, members of NCRP Scientific Committees and members of NCRP Collaborating and Contributing Organizations in the audience.

for the Lecture. No tickets are required and admission is free.

Dr. Wyckoff, a physicist, is currently Chairman of the International Commission on Radiation Units and Measurements (ICRU). From 1966-1971 he served as Deputy Director (Scientific) of the Armed Forces Radiation Research Institute. He came to that position following retirement after more than twenty years of outstanding scientific achievement at the National Bureau of Standards including ten years as Chief of the Radiation Physics Division.

FIFTH USSR CONFERENCE ON NEUTRON PHYSICS

The State Committee on Utilization of Atomic Energy of the USSR, the Academy of Sciences of the USSR, the Academy of Sciences of the Ukrainian SSR, its Scientific Council on Nuclear Physics, and the Institute of Nuclear Research are organizing the Fifth All-Union Conference on Neutron Physics, which will take place at the Institute of Nuclear Research in Kiev on the 15 to 19 of September 1980.

The topics of the Conference include: 1) Fundamental Problems in Neutron Physics; Neutron Dipole Moment; Non-conservation of Parity in Neutron Reactions; Studies of Nuclear Structure by Means of Neutrons; Studies of Nuclear Reaction Mechanisms Using Neutrons; Ultra-cold Neutrons; Neutron Reactions in Super-intense Electromagnetic Fields; Neutron Nuclei and the Astrophysical Aspects of Neutron Physics; and Neutrons in Reactions with Heavy Ions. 2) The Physics of Nuclear Fission: New Experimental Data and Theoretical Aspects of Fission Physics. 3) Neutron Cross Sections for Nuclear Technology and Other Applications; The Requirements, the Current Status, and the Future: Thermal, Fast, Thermonuclear, and Hybrid Reactors; The Provision of Constants Required for Engineering Calculations; Environmental Protection; The Production of Materials Having Required Properties; Radiobiological and Medical Aspects; Activation Analysis; Geophysical, Geological, and Other Applications; The Collection, Storage, Methods of Evaluation of Nuclear Data, Correlation with Integral Experiments; and Neutron Cross Section and Flux Standards. 4) Neutron Spectrometry and Neutron Sources: High Flux Reactors, High Current Accelerators, Thermonuclear Sources; Gamma Radiation in Channeling of Relativistic Electrons and Positrons and Their Synchrotron Radiation; Laser Technology in Neutron Research; and Advanced Neutron Detectors and Methods of Neutron Detection and of Nuclear Emissions in Neutron Reactions. 5) Promising Methods of Generating Nuclear Energy.

All papers presented must conform to the requirements of direct photo reproduction that are used in the USSR, specifically: Paper size, 210 × 300 mm; margins: at the bottom and at the right 30 mm; margins at the top and at the left 20 mm; and text with drawings and tables must not be beyond 160 mm × 250 mm. Registration fee of 15 rubles for each participant includes the proceedings of the conference.

Titles (or topics) of reports must be supplied before the first of January 1980 to the Chairman of the Organizing Committee, Professor Pasechnik, M. V., at the following address: USSR, 252028, Kiev-28, Science Prospect, 119, Institute of Nuclear Research of the Academy of Sciences of the Ukrainian SSR; Cable or telegraph: Kiev 28, Proton; Telephone: 63-23-49.

THIRD NATIONAL CONFERENCE ON BIOMEDICAL PHYSICS AND ENGINEERING

Announcement has been made of the Third National Conference on Biomedical Physics and Engineering with International Participation to be held in Sofia, Bulgaria October 25-26, 1980 under the auspices of the Union of the Scientific Medical Societies in Bulgaria and the National Scientific Society of Biomedical Physics and Engineering. The program will include discussions of problems in the following subject areas: acquisition and processing of information in physiological and clinical investigations; metrology and dosimetry of ionizing radiations in medicine and biology; physics and engineering problems in X-ray, nuclear medicine and ultrasonic diagnostics; physics and engineering problems in the protection of man and his environment; and physical methods and engineering in medicine and biology.

Official languages are Bulgarian, Russian, English, and German. Papers will be presented orally or in posters. A participation fee (30.-leva) will cover a copy of the conference program and abstracts of the papers. Potential attendees are asked to submit name, scientific degree, institution represented, full mailing address, and title and author of a suggested paper before March 1980 to the Secretary of the Organizing

Committee: Robert Poppitz, Medical Academy – Base No. 2, Laboratory of Clinical Dosimetry and Metrology of Ionizing Radiation (SSDL), 1040 Sofia 1 Bulgaria. Additional information will follow.

1ST ARAB CONFERENCE ON MEDICAL PHYSICS

The Arab Research Center for Injuries and The Arab Physical Society have announced the 1st Arab Conference on Medical Physics to cover Radioactive Materials and Radiations in Civil and Military Medicine. It will be held October 30 – November 4, 1980 at the American University of Beirut, Lebanon. The conference is open to all research scientists in Medical Physics. The application for attendance should contain: name, title, affiliation and address.

Topics of the conference include: effect of ionizing radiation on living organisms; radioactive materials for medical uses; radiation dosimetry; diagnostic methods and instrumentations; clinical applications of radioactive materials and radiation; and radioactive pollution and radiation protection. Anyone interested in presenting a paper should submit three copies of a typewritten double-spaced abstract (200–500 words) not later than April 1, 1980.

For additional information contact Dr. Hafez Kobeissi, Secretary General of the Conference, The Arab Research Center for Injuries, P. O. Box 25103, Ghobeiry, Beirut, Lebanon.

1980 ANNUAL MEETING OF THE NCRP

The National Council on Radiation Protection and Measurements (NCRP) has released the provisional program for the 1980 Annual Meeting to be held on April 2–3, 1980 in the Auditorium of the National Academy of Sciences, 2100 Block of C Street, N.W., Washington, D.C. The Scientific Session scheduled for April 2nd has as its theme quantitative risk in standards setting. The following papers will be heard: "The Scientific Basis for Risk Quantification" by Warren K. Sinclair; "Should Carcinogens and Mutagens be Treated Differently than Other Toxic Agents?" by Nicholas A. Ashford; "Can Comparison of Risks Define an Acceptable Level?" by Leonard A. Sagan; "Are Real or Practical Thresholds or Background Radiation Useful in Setting de minimis Levels or Exposure Limits?" by Merrill Eisenbud; and "The Economics of Risk and the ALARA Approach in Standard" by Dan Bennison. A summary of the morning session will be given by Victor P. Bond and will be followed by a panel – "Viewpoints on Quantitative Risk and Exposure Limits," moderated by S. James Adelstein. Viewpoints and panelists include: Legislative, James W. Spensely; Labor, Paul R. Shoop; Public Interest Groups, Thomas B. Cochran; Industry, Wallace B. Behnke; and NCRP, Warren K. Sinclair and Victor P. Bond. The fourth Lauriston S. Taylor Lecture will be presented by Dr. Harold O. Wyckoff at 4:00 p.m. A reception in honor of the Lecturer will be held in the Great Hall of the Academy immediately following the Lecture.

The tentative schedule for April 3, 1980 includes the NCRP business meeting, and scientific briefings on Studies on "Operation Smoky" Personnel by Glyn G. Caldwell, U. S. Naval Shipyard Studies by Genevieve Matanowski, and Nevada Test Site Fallout Studies by Charles W. Mays.

NEACRP MEET TO BE HELD IN IDAHO

The OECD Nuclear Energy Agency (NEA) Committee on Reactor Physics (CRP), upon U.S. invitation, will hold its next meeting (23rd in the series) at Idaho Falls during the week September 22–26, 1980. Following executive sessions, the preliminary agenda of technical sessions includes several new topics: structural materials, reactivity effects and activation; pressurized transient studies; problems in the interpretation and analysis of critical experiments; and methods of utilization of information from operating reactors. Topics carried over from previous meetings include heterogenous cores, neutron penetration problems, core instrumentation, and out-of-pile criticality problems. A review of recent activities and national programs will be followed by a discussion on the LMFBR benchmark, the multi-dimensional kinetics benchmark, and the noise analysis benchmark in connection with SMORN III.

7TH INTERNATIONAL CODATA CONFERENCE

The 7th International CODATA Conference, to be held in Kyoto, Japan on October 8-11, 1980, has as its theme, "Role of Data in a Dynamic World." The scope of this international conference will range from the role of data in basic scientific research to applications focusing on major problems facing society. Some of the aspects which will receive special emphasis are: formation of new scientific concepts and solution of problems using existing data; needs for new, evaluated data to test new working hypotheses; critical evaluation of data; and promotion of data reliability in scientific applications.

Presentations will be in the form of papers (invited papers and submitted contributions) and poster sessions. Scientists from many parts of the world representing different disciplines will participate in sessions specifically devoted to: natural and controlled ecosystems, biological sciences, geosciences, computer storage and dissemination of data, large data banks, data in industrial applications, thermodynamics, spectroscopy, and other submitted contributions.

Users of data, as well as those involved in data compilation, data evaluation, and data handling are invited to submit papers on subjects within the scope of the conference. Since poster sessions are planned at the conference, the paper may be presented as a poster. The title, together with a brief description of the contents of the paper, should be submitted as soon as possible, but not later than February 1, 1980, to the Co-Chairman of the Program Committee, Professor T. Shimanouchi, c/o Japan Society for CODATA, Dai-ichi Kanamori Bldg., 1-5-31 Yushima, Bunkyo-ku, Tokyo, 113 Japan. Authors of papers will be notified before April 1, 1980, about the acceptance of their papers and will receive instructions on providing an abstract at that time.

Full information may be secured from Dr. Y. Mashiko, c/o Japan Society for CODATA, Dai-ichi Kanamori Bldg., 1-5-31 Yushima, Bunkyo-ku, Tokyo, 113 Japan.

DECEMBER ACCESSION OF LITERATURE

The following literature cited has been ordered for review, and that selected as suitable will be placed in the RSIC Information Storage and Retrieval Information System (SARIS). This early announcement is made as a service to the shielding community. Copies of the literature are not distributed by RSIC. They may generally be obtained from the author or from a documentation center such as the National Technical Information Service (NTIS), Department of Commerce, Springfield, Virginia 22151.

RSIC maintains a microfiche file of the literature entered into SARIS, and duplicate copies of out-of-print reports may be available on request. Naturally, we cannot fill requests for literature which is copyrighted (such as books or journal articles) or whose distribution is restricted.

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

ANSI N343-1978,
American National Standard for Internal Dosimetry for
Mixed Fission and Activation Products., American
National Standards Committee N13, August 30,
1978, American National Standards Institute, Inc.,
1430 Broadway, New York, NY 10018

BNL-NCS-50640, Third Edition,
The Bibliography of Integral Charged Particle Nuclear
Data., Burrows, T.W.; Burt, J.S., March 1979,
NTIS \$19.00

CERN-79-04,
Compilation of Radiation Damage Test Data. Part 1:
Cable Insulating Materials., Schonbacher, H.; *et al.*,
June 1979, European Organization for Nuclear
Research (CERN), Geneva

CONF-790816-29,
Application of Generalized Perturbation Theory to Fast
Reactor Safety Sensitivity Studies., Parks, C.V.;
Tomlinson, E.T.; Oblow, E.M., 1979, Dep., NTIS

CONF-791103-20,
Neutron Skyshine Calculations for the PDX
Tokamak., Wheeler, F.J.; Nigg, D.W., 1979,
Dep., NTIS

COO-2458-25; CONF-791103-3(Summ.),
General Multigroup Nodal Procedure Based on
Response Matrix Principles., Menezes, A.DaC.;
Becker, M., 1979, Dep., NTIS

COO-2712-7; CONF-790625-7,
TEM Studies of Graphite Irradiated at Different
Neutron Energies., Thrower, P.A.; Gray, W.J.,
1979, Dep., NTIS

EPRI-ER-536-SR, pp.57-67,
Fusion Blankets for Catalyzed D-D and D-³He
Reactors., Fillo, J.A.; Powell, J.R., In: Proceedings
of the Review Meeting on Advanced-Fuel Fusion. Choi,
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