RSIC Newsletter

No. 210   June 1982

You can observe a lot just by watching — Yogi Berra

Sixth ICRS Reminder

The deadline for submitting papers for the 6th International Conference on Radiation Shielding is *September 6, 1982*. Persons wishing to submit papers for the May 16–20, 1983 meeting should prepare and send summaries as soon as possible. Instructions for preparation of summaries are found in the CALL FOR PAPERS given in *RSIC Newsletter* No. 208, April 1982.

The conference, to be held in Tokyo, Japan, is under the General Chairmanship of *Hiroshi Ishikawa* (JAERI Director). The Technical Program Chairman, *Takumi Asaoka*, completed an initial round of visits and discussions with sponsoring agencies and committees in April. Details of some of these meetings are summarized in the May 1982 *RSIC Newsletter* (No. 209).

STANDARDS ACTIONS

We note the following Standards activities.

ANSI — Final Actions
ANSI N13.1-1969 (R1982) (reaffirmation) *Sampling Airborne Radioactive Materials in Nuclear Facilities*, sets forth the principles that apply in obtaining valid samples of airborne radioactive materials and prescribes acceptable methods and materials for gas and particle sampling. This standard is limited to the collection of samples and does not embrace the measurement of the radioac-

tive materials collected. It is further limited to guides for sampling airborne radioactive materials in installations where work with radioactive materials is conducted, with the primary emphasis on the need to protect the radiation worker. It does include sampling effluent gases prior to or at the point of release to the atmosphere from the installation. Reaffirmation date: March 26, 1982.

PERSONAL ITEM

A. David Rossin has been named the 1982 Electric Industry's Man of the Year. The award was presented on April 27 during the American Power Conference All Engineers Dinner. According to *Robert Lincicome*, editor of *Electric Light and Power Magazine*, Rossin was chosen for the honor by the magazine's readers for his "untiring support in the development and implementation of nuclear power in the United States and for appearing in countless public forums to convey the message that nuclear energy is economical and safe."

Rossin, Director of Research for Commonwealth Edison, is on leave and serving as Director of the Nuclear Safety Analysis Center for the Electric Power Research Institute, Palo Alto, California. One of the nation's most active speakers on behalf of nuclear energy, Rossin is a prominent member of the American Nuclear Society. In his role as head of the Nuclear Safety Analysis Center, Rossin monitors safety in nuclear facilities, making

recommendations to correct any possible flaws in their design and operation.

CHANGES TO THE RSIC CODES COLLECTION

An update and six new code systems were added to the RSIC computer codes collection during the month of May. Included are two contributions from the Federal Republic of Germany and one each from Australia, Italy, and Japan.

CCC-254/ANISN-ORNL

The CDC 6600/7600 version (C) of this multigroup one-dimensional discrete ordinates transport code system with anisotropic scattering was updated to correct an error in Subroutine PLSNT. Correcting this error eliminates level 8 error messages during compilation. Details of the correction may be requested from RSIC. References: K-1693; NAA-SR-10951; ORNL/TM-4015, ORNL/TM-3049. FORTRAN IV; CDC 6600/7600.

CCC-420/DARTAB

A code system for combining airborne radionuclide environmental exposure data with dosimetric and health effects data to generate tabulations of predicted health impacts was contributed by the Oak Ridge National Laboratory. Options are included to permit the user to request tabulations by various topics (e.g., cancer site, exposure pathway, etc.) to facilitate characterization of the human health impacts of the effluents. Reference: ORNL-5692. FORTRAN IV; IBM 360/370.

PSR-177/NEUPAC

A code package for unfolding neutron spectra data from activation data of dosimeter foils was contributed by Power Reactor and Nuclear Fuel Development Corporation, Tokyo, Japan. Integral quantities and their sensitivities, together with an error estimate of the unfolded spectra and integral quantities are determined. The user may select in-core memory or external memory, depending on the number of groups of input data. Reference: PNC N941 80-192Tr. FORTRAN IV; FACOM M-200.

PSR-178/FANAL

A least-squares shape analysis code system was

contributed by Karlsruhe Nuclear Research Center, Federal Republic of Germany, through the Nuclear Energy Agency Data Bank, Gif-sur- Yvette, France. Developed for structural materials (Cr, Fe, Ni ...), FANAL extracts resonance parameters and total cross sections from neutron transmission data obtained by the time-of-flight technique. Doppler broadening is applied to level sequences with vanishing potential scattering (p-wave resonances). Reference: KFK-2129. FORTRAN IV; IBM 3033 and 370/168.

PSR-179/FANAC

A shape analysis code system for resonance parameter extraction from neutron capture data was contributed by Karlsruhe Nuclear Research Center, Federal Republic of Germany, through the Nuclear Energy Agency Data Bank, Gif-sur-Yvette, France. Written for light to medium-weight or near-magic target nuclei, FANAC extracts resonance parameters from high-resolution capture yields measured with time-of-flight method. Treating many resonances simultaneously, FANAC permits determination of up to 20 cross section parameters by simultaneously fitting calculated capture yield curves to experimental data from up to five time-of-flight measurements that may differ with respect to sample thickness, flight path or other experimental characteristics. Reference: KFK-2145. FORTRAN IV; IBM 3033 and 370/168.

PSR-182/XLACS-IIA

A code system for producing weighted multigroup neutron cross sections from ENDF/B data was contributed by the Australian Atomic Energy Commission, Sutherland, Australia. Based on XLACS-II (packaged in PSR-63), which was developed by the Union Carbide Nuclear Division, Computer Sciences Division at Oak Ridge National Laboratory, XLACS-IIA offers an improved method of treating thermal neutron scattering plus extensive changes in resonance treatment. Efficiency is improved in the joining of thermal and epithermal data. Reference: Notes on the AAEC Version of XLACS II. FORTRAN IV; IBM 3031/3033.

PSR-183/FOURACES

A group-averaged cross section generator was

contributed by Centro di Calcolo, Comitato Nazionale Energia Nucleare, Bologna, Italy. Designed as a multiformat buffer, FOURACES accepts data in ENDF/B, KEDAK, and UK formats. It computes group-averaged nuclear constants which are flux and temperature dependent. Reference: RT/FI(73)16. FORTRAN IV; IBM 370/168.

CHANGES TO THE DATA LIBRARY COLLECTION

Two data libraries have been extended and one new library has been added to the RSIC collection.

DLC-60B/MACKLIB-IV-82

The 171 neutron, 36 gamma-ray group nuclear response function library calculated with MACK-IV from ENDF/B-IV has been extended by Argonne National Laboratory. The library was generated using the same weight function as that used for DLC-41/VITAMIN-C and now contains values more consistent with the latter. In some cases, thermal group values were somewhat different from Maxwellian averages with the original MACKLIB-IV. Since VITAMIN-C and MACKLIB-IV were developed primarily for fusion applications, such discrepancies were not easily noted. We are grateful to EG&G, Idaho for noting the problem. The updated version is denoted DLC-60B/MACKLIB-IV-82. Reference: ANL/FPP/TM-106. IBM 370/3033.

DLC-74/PUDK-82

The library of measured results for delayed β- and γ-ray spectra due to thermal neutron fission of ^{239}Pu has been extended by Oak Ridge National Laboratory with the addition of simular data for ^{241}Pu. Results are included for irradiaton times of 1, 5, and 50 seconds. A retrieval code is supplied for editing the data in tabular form. References: ORNL/NUREG-34; NUREG/CR-0717 (ORNL/NUREG-47). IBM 370/3033.

DLC-96/PEFPYD

A fission-product decay data library based on ENDF/B-IV was contributed by Los Alamos Scientific Laboratory, Los Alamos, New Mexico. The package contains two-point-per-decade aggregate fission-product decay-energy data and FITPULS, a code for obtaining analytic fits to the data. FIT-PULS is an interactive code which has not yet been made operable on the ORNL computers. It was developed on the LTSS used at LANL and LLNL. The following materials are included: ^{235}U, ^{239}Pu, ^{238}U, ^{233}U, ^{241}Pu, and ^{232}Th. References: LA-8365-MS and LA-8277-MS. FORTRAN IV; CDC-6600.

VISITORS TO THE CENTER

During the month of May the following persons came for an orientation visit and/or to use EPIC facilities: *Austin A. Odell*, Lawrence Livermore National Laboratory; *E. H. Brehm*, BBC, Federal Republic of Germany; and *J. G. Gonnord*, CEA/CEN/Saclay, Gif-sur-Yvette, France.

COURSE OFFERING

Radiation Protection Short Course

A one week intensive course designed to provide an overview of the basic scientific and engineering principles underlying radiation protection is offered by Engineering Technology, Inc., Waco, Texas. The course is primarily descriptive, with a minimum of mathematics or theoretical rigor. It will be of value to practicing safety professionals, engineers, and technical managers who may be involved with radiation protection in an ancillary or management role, as well as to radiation protection technicians, radiographers, researchers, and others who work with ionizing radiations and radioactive materials. Topics to be discussed include: Atomic Structure and Radioactivity, Radioactive Decay, Production of X-Rays, Biological Effects of Radiation, Radiation Protection Standards, Legal Bases of Radiation Control, Radiation Units, Measurement of Radiation, Personnel Monitoring, Operations with Radioactive Materials, Contamination Control, and Disposal of Radioactive Wastes. Students should have a general understanding of Elementary Chemistry, Atomic Structure, and Physics, and should be able to perform simple algebraic calculations, including logarithmic and exponential functions.

Participants successfully completing the course will be awarded ABIH Maintenance Certification points and 3 Continuing Education Units.

Radiation Protection is offered on two occasions in 1982 during July 26–30 at Los Alamos, New Mexico, and October 25–29 at Anaheim, Califor-

nia. The $650 fee for the five-day course includes course tuition, text and notes, meeting materials, and break refreshments. Registrations may be made by telephone and later confirmed by submitting the registration form and mailing it to: Short Course Director, Engineering Technology, Inc., P.O. Box 9000, Waco, TX 76710. Telephone: (817) 772-0082.

CALENDAR

We call attention to the following courses and conferences.

July 1982

Power Plant Simulation (July 12–16) and *Power Plant Simulation Workshop* (July 19–21), short cources offered by the University of California, Los Angeles Extension. Either or both sessions may be attended. Contact Short Course Program Office, UCLA Extension, P.O. Box 24901, Los Angeles, CA 90024; phone (213) 825-1295.

Basic Use of Radionuclides in Research, Oak Ridge, Tennessee, July 19-30, 1982, sponsored by Oak Ridge Associated Universities, Inc. Contact: Registrar, Professional Training Programs, P.O. Box 117, Oak Ridge, TN 37830; phone (615) 576-3434.

IEEE Annual Conference on Nuclear and Space Radiation Effects, Las Vegas, Nevada, July 20–22, 1982, sponsored by: Institute of Electrical and Electronics Engineers, Inc.; NPSS Radiation Effects Committee; Defense Nuclear Agency; Jet Propulsion Laboratory; and Sandia National Laboratories. Contact: A. Ochoa, Jr., CRM Div. 2144, SNL, Albuquerque, NM 87185; phone (505) 844-6648, FTS 844-6648.

2nd Joint ASME/ANS Nuclear Conference, Portland, Oregon, July 25–28, 1982, sponsored by the American Society of Mechanical Engineers, New York. Contact: Larry Oyen, Sargent and Lundy, 55 E. Monroe, Chicago, IL 60603; phone (312) 269-2000.

MAY ACCESSION OF LITERATURE

The following literature has been selected for review, and that which is 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 NOT YET IN OUR SYSTEM. PLEASE ORDER FROM NTIS OR OTHER AVAILABLE SOURCE AS INDICATED.

REACTOR AND WEAPONS RADIATION SHIELDING LITERATURE

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CONF-820321-16 ANS Shielding Standards for Light-Water Reactors., . . Trubey, D.K., . . 1982, . . NTIS, PC A02/MF A01

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