RSIC Newsletter

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Prejudice is a mist, which in our journey through the world often dims the brightest and obscures the best of all the good and glorious objects that meet us on our way.— Shaftesbury

Cost Recovery Schedule for Packages Developed by RSIC Programs

Prior to FY 1989, RSIC sponsors fully funded our packaging and dissemination activities on behalf of our entire technical community, regardless of their funding profile. Since then, our sponsors have not been able to bear this entire cost and cost-recovery mechanisms were put in place.

In the January 1992 *RSIC Newsletter*, we published the cost matrix to be used for DOE-software developed in programs **outside** RSIC's current sponsor community. For packages developed prior to FY 1989 and those **program-sponsored** packages added since that time, the following cost-recovery structure applies:

DOE and contractors, other government agencies, Educational Institutions, Not-for-profit organizations	$250
Public	400
Foreign	580

This cost structure is consistent with that used by DOE's Energy Science and Technology Software Center (ESTSC) for packages for which their funders provide a portion of the cost incurred for processing.

Again, for RSIC users whose work is covered by our programmatic sponsors, no cost recovery is required.

R. W. Roussin

CHANGES TO THE COMPUTER CODE COLLECTION

Four changes were made to the computer code collection. Two new code systems were packaged and added to the collection, an existing code package was corrected, and an existing code package was replaced with a newly frozen version. One change resulted from a foreign contribution.

CCC-467/ITS 3.0

Sandia National Laboratories, Albuquerque, New Mexico, and the National Institute of Standards and Technology, Gaithersburg, Maryland, contributed a newly frozen version of the integrated TIGER series of the coupled electron/photon Monte Carlo code system, designated ITS 3.0. This upgrade includes major improvements in the physical model, computational efficiency, input/output options, and user friendliness. Coherent scattering and binding effects in both coherent and incoherent scattering were added, and improvements were made to electron stopping powers, bremsstrahlung cross sections, and electron energy-loss straggling. Full angular distributions of particle fluxes are available, and separate accounting of line radiation is provided under the photon-escape and photon-flux options. A very fast option for photon-only transport was added. Electron trapping and Russian roulette of photon generated secondary electrons is now more efficient. Finally, the convenience and efficiency of automatic subzoning was expanded.

The UPEML code system, also distributed as PSR-245/UPEML, is now included in this release to emulate the basic features of the CDC UPDATE processor and aid in the installation of ITS. ITS 3.0 is operable on Cray (UNICOS), CDC Cyber-76, IBM-3081 (MVS), VAX (VMS), IBM RISC, and SUN UNIX workstations and is transmitted on either 1 DC 6150 tape cartridge or three DS/HD (1.2 or 1.44 MB) diskettes.

The PC package, version B converted by Experimental and Mathematical Physics Consultants, Gaithersburg, Maryland, includes both DOS and OS/2 versions of ITS 2.1 and did not change in this release. The ITS 2.1 PC package is available on fourteen 5.25-in DS/HD (1.2 MB) diskettes.

References: SAND91-1634 (March 1992), Sandia National Laboratories Memo (April 1987), SAND84-0573 (November 1984), Informal Report (1988), and Informal Notes (Feb. 1988, Sept. 1990, and April 1992). Fortran-77; CRAY, CYBER-76, IBM, VAX, IBM and Sun Unix workstations, ITS 3.0 (A); PC, ITS 2.1 (B).

CCC-515/KUX MICRO

This solution for the shielding of medical x-rays and mammography by the methods in the NCRP Report No. 49 was corrected by the contributor, Douglas J. Simpkin of the Department of Radiology, St. Luke's Medical Center, Milwaukee, Wisconsin. KUX calculates the thickness of barrier materials required to bring the weekly exposure near an x-ray or mammography room down to the maximum permitted. This change corrects an error in which K0 was not declared as REAL in three subroutines. The effect of the error will depend on the room geometry/workload, etc. For the default values in the program, the error is to undershield by about 2%. KUX is written in Fortran 77 and runs interactively on personal computers. It is transmitted on one DS/DD (360 kb) diskette. References: *Health Physics* 52(4) (1987), 53(3) (1987), and 56(2) (1989). Fortran 77; IBM PC and Vax.

CCC-600/TRIGAP MICRO

The Jozef Stefan Institute, Ljubljana, Yugoslavia, through the IAEA and the NEADB, contributed this code system for reactor physics calculations of the TRIGA Mark II reactor. The program can be used for criticality predictions, power peaking predictions, fuel element burn-up calculations and data logging, and in-core fuel management and fuel utilization improvement.

TRIGAP runs on IBM PC or compatible computers with at least 540 K of memory. The Microsoft Version 5.0 compiler was used to create the executable code. The package is distributed on one DS/HD (1.2 or 1.44 MB) diskette. References: IJS-DP-5883 (Sept. 1990), IJS-DP-5040 (1987), and

IJS-DP-4238 (Dec. 1985). Fortran 77; IBM PC.

CCC-601/GENII MICRO

Pacific Northwest Laboratory, Richland, Washington, through the DOE Energy Science and Technology Software Center, Oak Ridge, Tennessee, contributed the GENII code system. GENII was developed to incorporate the internal dosimetry models recommended by the International Commission on Radiological Protection (ICRP) into the environmental pathway analysis models used at Hanford. GENII is a coupled system of seven programs and the associated data libraries that comprise the Hanford Dosimetry System (Generation II) to estimate potential radiation doses to individuals or populations from both routine and accidental releases of radionuclides to air or water and residual contamination from spills or decontamination operations. The GENII system includes interactive menu-driven programs to assist the user with scenario generation and data input, internal and external dose factor generators, and environmental dosimetry programs. The programs analyze environmental contamination resulting from both far-field and near-field scenarios.

GENII runs on IBM PC/AT or compatible computers with an 80287 math coprocessor, 640 K of random access memory and a minimum of 5 K of on-line disk storage. The executables and data files are distributed on three DS/HD (1.2 or 1.44 MB) diskettes. (Source files are not included.) References PNL-6584 Vol. 1 (Dec. 1988) and Vol. 2 (Nov. 1988).

PERSONAL ITEMS

In serving a specialized area of scientific endeavor, it seems important that we note significant changes in the activities 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.

Rockwell Awarded to Trubey— The Radiation Protection and Shielding Division of the American Nuclear Society presented its prestigious Rockwell Award to ***David K. Trubey*** during its recent topical in Pasco, Washington. The citation reads as follows:

> *On behalf of the American Nuclear Society, the Radiation Protection and Shielding Division is pleased to present to*
>
> ***David K. Trubey***
>
> *its highest award, the Rockwell Award, for a lifetime of outstanding technical achievements and service to the radiation shielding community.*
>
> *Throughout his extremely productive career, he has had a remarkable influence on many areas of radiation protection and shielding. His research has spanned a wide variety of topics ranging from measurements of effective neutron removal cross sections to the development of sophisticated transport codes. Shielding specialists everywhere routinely use fundamental data for photon cross sections and buildup factors that have been made available largely through his efforts. As co-founder and past director of the Radiation Shielding and Information Center, he devised a computer based information retrieval system that has evolved into the preeminent information and data service available to our profession. Through his leadership in organizing many workshops, seminars, and conferences, the shielding community*

has been brought together and his long history of developing and promoting many shielding standards has contributed much to the maturing of our discipline.

His numerous services to the American Nuclear Society and to the Radiation Protection and Shielding Division have also extended over many years. He has served on countless ANS committees and is a past Chairman of the Division. For twenty years he has headed the ANS-6 Standards Subcommittee and been instrumental in the initiation, design, creation and publication of a myriad of important standards. He is a Fellow of the Society, and has received both the ANS Standards Service Award and our Division's Technical Excellence and Service Award.

Shielding specialists everywhere owe him a profound debt of gratitude for his lifetime of exceptional achievement.

We at RSIC congratulate Dave on receiving this award. Our readers know of the contributions Dave has made to shielding through his leadership in this center.

NCRP Members Elected— The National Council on Radiation Protection and Measurements (NCRP) has announced the results of the regular membership elections at the 1992 Annual Meeting in April.

Newly elected members are: *Harold L. Beck*, Dept. of Energy Environmental Measurements Laboratory, New York; *Sarah Donaldson*, Stanford University Medical Center; *David Hoel*, National Institute of Environmental Health Sciences; *F. Owen Hoffman*, Oak Ridge National Laboratory; *John R. Johnson*, Battelle Pacific Northwest Laboratories; *Gilbert S. Omenn*, University of Washington, Seattle; *Michael T. Ryan*, CHEM-Nuclear Systems, Inc., Barnwell, South Carolina; *David H. Sliney*, U.S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, Maryland; *F. Ward Whicker*, Colorado State University, Ft. Collins.

The following members were re-elected: *Fred T. Cross*, Battelle Pacific Northwest Laboratories; *Arthur W. Guy*, University Hospital, Seattle; *Fred A. Mettler, Jr.*, University of New Mexico School of Medicine, Albuquerque; *Lawrence N. Rothenberg*, Memorial Sloan-Kettering Cancer Center, New York.

Honorary members elected to the council are: *William J. Bair*, Battelle Pacific Northwest Laboratories; *A. Alan Moghissi*, University of Maryland at Baltimore; *Leonard A. Sagan*, Electric Power Research Institute, Palo Alto, California; and *Arthur C. Upton*, New York University Medical Center, Tuxedo.

Hubbell named to editorial staff of physics journal— *John H. Hubbell*, of the National Institute for Standards and Technology (NIST), has been named an editor-in-chief of the *Radiation Physics and Chemistry, International Journal of Radiation Applications and Instrumentation, Part C*, published by Pergamon Press, in a move to attract more radiation physics manuscripts. Those who wish to submit a manuscript should send it to one of the regional editors.

Visitors to RSIC

During the month the following persons came for an orientation visit and/or to use RSIC facilities: *Hiroyubi Handa*, of Hitachi Engineering, Japan; *Keiko Tada*, Mitsubishi Atomic Power, Ltd., Tokyo; *Hirokazu Tsunoda*, Mitsubishi Research Institute, Inc., Tokyo; *Akihiro Yoshida*, PNC, O-araicho, Japan; and *Y. Shimizu*, Kawasaki Heavy Industries, Ltd., Tokyo.

CONFERENCES, COURSES, SYMPOSIA

RSIC attempts to keep its users/contributors advised of conferences, courses, and symposia in the field of radiation protection, transport, and shielding through this section of the newsletter. Should you be involved in the planning/organization of such events, feel free to send your announcements and calls for papers to RSIC.

1993 HEART Issues Call for Papers

August 17, 1992, is the deadline for receipt of papers from those wishing to participate in the *11th Hardened Electronics and Radiation Technology (HEART) Conference*. The conference will be held at the Naval Training Center, Orlando, Florida, February 1–5, 1993. This is a classified conference sponsored by the U.S. Department of Defense and the Department of Energy to provide a forum specifically for research and development of a classified or sensitive nature. Of particular interest are experimental and analytical observations that are both new and significant to the design and test or the economics of hardened systems. Technical papers, either classified up to the level of Secret Restricted Data or unclassified but restricted by export control (ITAR), are invited exclusively for consideration in the conference program. No CNWDI will be presented. All those in attendance will have security clearances certified by DOD and DOE officials to be appropriate for receipt of this information.

A new topic of special interest, thermomechanical effects in systems exposed to nuclear radiation, will be introduced this year. Inclusion of this topic broadens the scope of the conference in the area of nuclear effects, providing an opportunity for researchers to compare approaches and concerns in system hardening and effects simulation.

Information for submission of papers may be obtained from DOD Nuclear Information Analysis Center (DASIAC), ATTN: 1993 HEART Conference, 2560 Huntington Ave., Suite 500, Alexandria, VA 22303.

First Egyptian Radiation Physics Conference, November 1992

The first Radiation Physics Conference will be held the second/third week of November 1992, at Faculty of Science-Assuit University (Qena branch), Egypt. Abstracts should be submitted before the end of **July 1992** to Prof. M. A. Gomaa, Head Rad. Prot. Dept., Atomic Energy Authority, 101 Kasr El Einy Street, Cairo, Egypt (Fax 00 202 354 0982). The topics being considered are:

- Radiation Sources
- Interaction of Radiation with Matter
- Radiation Detectors and Radiation Measurements
- Radiation Dosimetry
- Radiation Protection
- Radiation Control and Radiation Safety
- Radiation Shielding
- Radiation Physics Education (in Egypt)
- History of Radiation Physics (in Egypt)
- Applied Radiation Physics in the areas of medial physics, environmental physics, biophysics, industrial physics, and dating.

Calendar

Your attention is directed to the following events of interest.

June 1992

32nd Annual International Conference of the Canadian Nuclear Association and the 13th Annual Conference of the Canadian Nuclear Society, June 7–10, 1992, Saint John, New Brunswick. Contact CNA/CNS, 144 Front St. W, Suite 725, Toronto, Ont., Canada M5J 2L7 (phone 416-977-7620).

American Nuclear Society Annual Meeting, June 7–11, 1992, Boston, Massachusetts. Contact: Mary Keenan, ANS, 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 708-352-6611).

10th Topical Meeting on Technology of Fusion Energy, June 7–11, 1992, Boston, Massachusetts, sponsored by the American Nuclear Society and the U.S. Department of Energy. Contact: Stephen O. Dean, Fusion Power Associates, 2 Professional Drive, Suite 248, Gaithersburg, MD 20879 (phone 301-258-0545).

Embedded Topical Meeting on Risk Management—Expanding Horizons, Boston, June 8–10, 1992, sponsored by several ANS divisions and other organizations. Contact: Technical Program Chair Ronald A. Knief, ERCE, P.O. Box 7010, Mechanicsburg, PA 17055-7010 (phone 717-691-1141) or ANS Meeting Dept. 555 N. Kensington Ave., La Grange Park, IL 60525 (phone 708-579-8258).

Environmental Radiation Surveillance, June 8–12, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

In-Place Filter Testing Workshop, June 8–12, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

Planning for Nuclear Emergencies, June 15–19, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

Cyclotron Production, Quality Control and Utilization of Medical Radionuclides, June 30–July 2, 1992, Varese, Italy, a course sponsored by the Joint Research Centre. Contact: K. Casteleyn, Inst. for Advanced Materials, Cyclotron, JRC-Ispra, Italy.

July 1992

1992 Nuclear and Space Radiation Effects Conference, July 13–17, 1992, in New Orleans. Contact: Nelson S. Saks, NSREC Technical Program Chairman, Naval Research Laboratory, Code 6813, 4555 Overlook Ave., Washington, DC 20375-5000 (phone 202-767-2534, Fax 202-767-0546).

Management and Disposal of Radioactive Wastes, July 13–17, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

Techniques in Nuclear Radiation Shield Analysis, July 13–17, 1992, a course sponsored by the University of Texas at Austin. Contact: Continuing Engineering Studies, The University of Texas at Austin, College of Engineering, ECJ 10.324, Austin,

TX 78712 (phone 512-471-3506, Fax 512-471-0831).

15th International Conference on High Energy Accelerators, July 20–24, 1992, Hamburg, Fed. Rep. of Germany. Contact: F. Willeke, Deutsches Elektronen-Synchrotron, Notkestrasse 85, 2000 Hamburg 52, FRG.

Advanced Workshop on Nuclear Emergency Planning, July 20–24, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

August 1992

SLOPOS5, 5th International Workshop on Slow-Positron Beam Techniques for Solids & Surfaces, Aug. 6–10, 1992, Jackson Hole, Wyoming, USA. Contact: Eric H. Ottewitte, Idaho National Engineering Laboratory, P.O. Box 1625, Idaho Falls, ID 83415-2114 USA (phone 208-526-1751; Fax 208-526-9267).

Basic Radiation Safety & Management, Aug. 13–14, 1992, Newport Beach, California, a seminar presented by Stan A. Huber Consultants, Inc. Contact: Stan A. Huber Consultants, Inc., 200 N. Cedar Road, New Lenox, IL 60451 (phone 815-485-6161; Fax 815-485-4433).

Nuclear Technologies for Space Exploration, Aug. 16–19, 1992, Jackson Hole, Wyoming. Contact: Dr. David Woodall, University of Idaho, College of Engineering, Moscow, ID 83843 (phone 208-885-6479).

Occupational and Environmental Radiation Protection, Aug. 17–21, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

Tennessee Industries Week-27, Aug. 17–21, 1992, Knoxville, Tennessee. Contact: Nuclear Engineering Department, Pasqua Engineering Bldg., The University of Tennessee, Knoxville, TN 37996-2300.

Spectrum 92: ANS Topical Meeting on Nuclear and Hazardous Waste Management, Aug. 23–27, 1992, Boise, Idaho. Contact: Technical Program Chair Dieter Knecht, WINCO, P.O. Box 4000, MS-5213, Idaho Falls, ID 83403 (phone 208-526-3627).

September 1992

IRRMA '92, Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications, Sept. 8–11, 1992, Raleigh, North Carolina. Contact: William F. Troxler, Troxler Electronic Laboratories, Inc., P.O. Box 12057, Research Triangle Park, NC 27709 (phone 919-549-8661).

Risk Analysis in Occupational & Environmental Health, Sept. 9–11, 1992, Boston, Massachusetts, a short course offered by Harvard School of Public Health. Contact: Mary F. McPeak, Assoc. Dean for Continuing Education, 677 Huntington Ave., Boston, MA 02115 (phone 617-432-1171; Fax 617-432-1969).

8th International Meeting on Radiation Processing, Sept. 14–19, 1992, Beijing, China, sponsored by the International Atomic Energy Agency. Contact: International Meeting on Radiation Processing, P.O. Box 1012 (30), Beijing 100 822, China.

6th Annual INEL Computing Symposium, Sept. 22–24, 1992, Idaho Falls. Contact: Teri Williams, EG&G Idaho, Inc., P.O. Box 1625, Idaho Falls, ID 83415-2602 (phone 208-526-9728).

14th International Conference on Plasma Physics and Controlled Nuclear Fusion

Research, Sept. 30–Oct. 7, 1992, Wuerzburg, Germany, sponsored by the International Atomic Energy Agency. Contact: IAEA, Conference Service Section, P.O. Box 100, A-1400 Vienna, Austria.

October 1992

International Symposium on Nuclear Data Evaluation Methodology, Oct. 12–16, 1992, Upton, New York, sponsored by Brookhaven National Laboratory. Contact: C. L. Dunford, Brookhaven National Laboratory, NNDC/197D, Upton, New York 11973.

Selection and Preparation of Witnesses for Environmental Litigation, Oct. 22–23, 1992, a course sponsored by the University of Texas at Austin. Contact: Continuing Engineering Studies, The University of Texas at Austin, College of Engineering, ECJ 10.324, Austin, TX 78712 (phone 512-471-3506, Fax 512-471-0831).

November 1992

1992 ANS/ENS International Meeting, Nov. 15–20, 1992, Chicago. Contact: General Chair James D. Shiffer, Pacific Gas & Electric Co., 77 Beale St., San Francisco, CA 94106 (phone 415-973-4684).

Basic Radiation Safety & Management, Nov. 19–20, 1992, Chicago, Illinois, a seminar presented by Stan A. Huber Consultants, Inc. Contact: Stan A. Huber Consultants, Inc., 200 N. Cedar Road, New Lenox, IL 60451 (phone 815-485-6161; Fax 815-485-4433).

February 1993

HEART, Feb. 1–5, 1993, Naval Training Center, Orlando, Florida, sponsored by the Department of Defense and the Department of Energy. Contact: Arne Kalma, S-Cubed, 3020 Callen Road, San Diego, CA 92121 (phone 619-450-2439).

April 1993

Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Apr. 19–23, 1993, Karlsruhe, Germany. Contact: H. Kuesters, KFK/INR, Postfach 3640 D-W-7500 Karlsruhe 1, Germany, or W. Werner, GRS, D-W-8046 Garching, Germany.

International High-Level Radioactive Waste Management Conference, Apr. 25–29, 1993, Las Vegas, Nevada, sponsored by the ANS, the U.S. Dept. of Energy, and the American Society of Civil Engineers. Contact: Billy Cole, E. R. Johnson Assoc., 10461 White Granite Drive, Suite 204, Oakton, VA 22124 (phone 703-359-8355; Fax 703-359-0842).

4th Topical Symposium on Emergency Preparedness and Response, to be held April 26–29, 1993, in Long Island, New York. Contact: Brant Aidikoff, Technical Program Chairman, LIANS, Box 436, Upton, New York 11973 (phone 516-436-4256).

June 1993

Safewaste '93: The Final Disposal of Nuclear Waste, June 14–18, 1993, Avignon, France, sponsored by the ANS and the European Nuclear Society. Contact: Pierre Tanguy, EDF, Direction Generale 32, Rue de Monceau, 75384 Paris Cedex 08, France.

August 1993

Topical Meeting on Environmental Transport and Dosimetry, Aug. 31–Sept. 3, 1993, Charleston, South Carolina, sponsored by the ANS. Contact: Robert Addis, Savannah River Laboratory, Environmental Transport Group, Bldg. 773-A, Box 616, Aiken, SC 29808 (phone 803-725-3325).

APRIL 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.

RADIATION SHIELDING LITERATURE

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Health Phys., 62, 344-350. . *Dosimetry Calculations for Concentric Cylindrical Source and Target Regions with Application to Blood Vessels*. . Faw, R.E.; Shultis, J.K. . April 1992

Health Phys., 62, 385-394. . *Personnel Dosimeter Angular Response Properties and the Adoption of ICRU Report 39 Quantities.* . May 1992

Health Phys., 62, 395-399. . *Effective Dose and Effective Dose Equivalent-The Impact of the New ICRP Definition for External Photon Irradiation*. . Zankl, M.; Petoussi, N.; Drexler, G. . May 1992

Health Phys., 62, 445-449. . *Photon Attenuation for Samples in Marinelli Beaker Geometry: An Analytical Computation*. . Sima, O. . May 1992

Nucl. Instrum. Methods, A290, 167-171. . *Coherent and Incoherent Scattering Cross Sections for Polarized X-Rays Integrated Over a Small Distributed Source*. . Hanson, A.L. . 1990

Nucl. Instrum. Methods, A309, 287-293. . *Neutron Response of a Spherical Proton Recoil Proportional Counter*. . Weise, K.; Weyrauch, M.; Knauf, K. . 1991

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Nucl. Saf., 32, 388-390. . *Technical Note: Ranking of Four Potential Nuclear Power Plant Sites in Iraq According to the Collective Dose Criterion*. . Marouf, B.A.; Al-Kateeb, G.H.; Al-Ani, D.S.; Mohamad, A.S.; Taha, J.S.;Mahmood, J.A. . September 1991

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Nucl. Saf., 32, 402-415. . *Activities Related to Waste and Spent Fuel Management*. . Muhlheim, M.D.; Silver, E.G. . September 1991

DESY 92-030. . *Calculations of the Photon Dose Behind Concrete Shielding of High Energy Proton Accelerators*. . Dworak, D.; Tesch, K.; Zazula, J.M. . February 1992

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