Radiation Safety Information Computational Center

No. 587   April 2014

Choose a job you love, and you will never have to work a day in your life.

Confucius

TABLE OF CONTENTS

REQUEST PROCESSING for STUDENTS and VISITING FACULTY at the DOE NATIONAL LABORATORIES

In order to expedite the process for the review and determination of requests from students and faculty members that will be working at the Department of Energy national laboratories, such customers will be able to submit a request to RSICC prior to their arrival at the laboratory as long as the following conditions are met.

1. The customer must provide the following in the comment section of their request:
   a. The name of the laboratory point-of-contact.
   b. The start date for their assignment at the laboratory.
2. The customer must provide a laboratory address in the request application.
3. The customer must use an official laboratory e-mail address in the request application.
4. The end-use statement must include the relevant information regarding the work that will be performed at the laboratory.
5. The customer must contact RSICC using their laboratory e-mail address on or after their start date notifying RSICC that they have begun work at the laboratory. The customer must include the request number in the subject line of their message to enable quick coordination of the request and review determination.

Upon notification that the customer has started their assignment at the laboratory, RSICC will send the package or instructions on how to download the package from RSICC. These conditions have been established and granted by our regulators in order to permit RSICC to better serve our customers.

Reported Error with the BUGLE-96 Library

Users of the BUGLE-96 cross section data library need to be aware of an issue with the up-scattering treatment in the library. Customers from Westinghouse Electric Company, LLC discovered that the BUGLE-96 library does not utilize the ANISN up-scattering treatment as declared in the manual for the code. Oak Ridge National Laboratory no longer maintains the BUGLE-96 library, and customers are encouraged to utilize the BUGLE-B7 library that is based on the ENDF/B-VII.0 library.

CHANGES TO THE RSICC CODE AND DATA COLLECTION

The following packages have been added to the RSICC catalog for those individuals that may be interested.

CCC-784/DIF3D 11.0

Argonne National Laboratory, Argonne, Illinois, contributed DIF3D11.0, which revises the performance and accuracy issues associated with the solution techniques of the variational nodal methods introduced in DIF3D8.0/VARIANT8.0 release (distributed by RSICC as CCC-649). The VARIANT option solves the diffusion or transport equations in two-and three-dimensional hexagonal and Cartesian geometries. Eigenvalue, adjoint, fixed source and criticality (concentration) search problems are permitted as are anisotropic diffusion coefficients. Flux and power density maps by mesh cell and region-wise balance integrals are provided. Although primarily designed for fast reactor problems and with a finite difference option only, up-scattering and internal black boundary conditions are also treated.

DIF3D reads and writes the standard interface files specified by the Committee on Computer Code Coordination (CCCC). Additional utilities are provided to allow users to better use the existing software package including a basic visualization capability called DIF3D_TO_VTK which generates input files for VISIT or Paraview.

All non - U.S. government funded license requests should be redirected to nera-software@anl.gov

Distribution includes Unix tar file which contains source code, code documentation (in pdf format), sample problem input and output, code dependent BCD and binary card image file descriptions, python scripts, a README installation file, an updated manual describing the revisions to the Variant option. Fortran 90 and C source code for Linux PCs, MacOSX and SUN (RSICC ID: C00784MNYCP01).

CCC-822/REBUS 11.0

Argonne National Laboratory, Argonne, Illinois, USA has contributed a new version of REBUS 11.0: Code System for Analysis of Fast Reactor Fuel Cycles. REBUS is a code designed for the analysis of fast reactor fuel cycles. Two basic types of analysis problems are solved: 1) the infinite-time, or equilibrium, conditions of a reactor operating under a fixed fuel management scheme, or 2) the explicit cycle-by-cycle, or non-equilibrium operation of a reactor under a specified periodic or non-periodic fuel management program. For the equilibrium type problems, the code uses specified external fuel supplies to load the reactor. Optionally, reprocessing may be included in the specification of the external fuel cycle and discharged fuel may be recycled back into the reactor. For non-equilibrium cases, the initial composition of the reactor core may be explicitly specified or the core may be loaded from external feeds and discharged fuel may be recycled back into the reactor as in equilibrium problems.

REBUS will handle both equilibrium and non-equilibrium problems using a number of different core geometries including triangular and hexagonal mesh. The neutronics solution may be obtained using finite difference, nodal diffusion-theory and variational nodal transport methods. Fixed source depletion may be done with the three solution methods. Other features include: no restrictions on the number of neutron energy groups, and general external cycle with no restrictions on number of external feeds, reprocessing plants, etc. Fuel management is completely general for non-equilibrium problems. Microscopic cross sections are permitted to vary as a function of the atom density of various reference isotopes in the problem as appropriate for soft spectrum systems. The user may specify control rod positions at each time node in the problem. A number of relational database datasets containing various types of summary results are available for use in tailoring reports.

Related and Auxiliary Programs: DIF3D reads and writes the standard interface files specified by the Committee on Computer Code Coordination (CCCC). DIF3D is embedded into REBUS-3 and thus included in this distribution. Additional utilities are provided to allow users to better use the existing

software package including a basic visualization capability called DIF3D_TO_VTK which generates input files for VISIT or Paraview. The FTU program is used to extract interface files from the STACK file REBUS generates during execution.

All non - U.S. government funded license requests should be redirected to nera-software@anl.gov

Package consists of a Unix tar file which includes source code, code documentation (in pdf format), sample problem input and output, code dependent BCD and binary card image file descriptions, python scripts, a README installation file, an updated manual describing the revisions to the Variant option, and a series of documents highlighting the updates made to REBUS-3 since its release. Fortran 90 source code for Linux PCs, MacOSX and SUN, (C00822MNYWS00).

CCC-823/PERSENT 11.0

Argonne National Laboratory, Argonne, Illinois, USA has contributed PERSENT 11.0. The PERSENT 11.0 release is a new package which allows users to perform perturbation and sensitivity calculations on conventional assembly homogenized diffusion and transport problems. It is built around the VARIANT option of DIF3D (included). For perturbation, calculations can be done that consider typical material and cross section perturbations. For sensitivity calculations, users can compute eigenvalue, reaction rate, reaction rate ratio, power fraction, reactivity worth, prompt neutron lifetime, and beta effective to the microscopic reactions: gamma, alpha, proton, deuteron, tritium fission, nu, and P0 & P1 scatter cross sections.

Related and Auxiliary Programs: DIF3D reads and writes the standard interface files specified by the Committee on Computer Code Coordination (CCCC). Parts of DIF3D are embedded into PERSENT and thus it is included in this distribution. Additional utilities are provided to allow users to better use the existing software package including a basic visualization capability called DIF3D_TO_VTK which generates input files for VISIT or Paraview. For PERSENT, additional utility programs are provided to allow users to verify their results with direct eigenvalue perturbations by manual adjustments to the cross section data.

All non - U.S. government funded license requests should be redirected to nera-software@anl.gov

Included the PRESENT11.0 package is a Unix tar file which includes source code, code documentation (in pdf format), sample problem input and output, code dependent BCD and binary card image file descriptions, python scripts, a README installation file, an updated manual describing the PERSENT code and revisions to the Variant option. Fortran 90 source code for Linux PCs, MacOSX. VARI3D is provided in a mixture of F66 and F77. (RSICC ID C823MNYWS00).

CCC-824/ARC 11.0

Argonne National Laboratory, Argonne, Illinois, USA has contributed a new version of ARC 11.0. he ARC system comprises a consistent compilation of DIF3D, PERSENT, REBUS-3, VARI3D, DIF3D_TO_VTK, and the associated utilities. DIF3D is the diffusion and transport theory solver for neutrons and gammas. PERSENT and VARI3D are perturbation & sensitivity analysis tools built around DIF3D. REBUS-3 is a generic fuel cycle analysis code built around DIF3D.

Related and Auxiliary Programs: DIF3D reads and writes the standard interface files specified by the Committee on Computer Code Coordination (CCCC). Additional utilities are provided to allow users to better use the existing software package including a basic visualization capability called DIF3D_TO_VTK which generates input files for VISIT or Paraview. For PERSENT, additional utility programs are provided to allow users to verify their results with direct eigenvalue perturbations by manual adjustments to the cross section data. The FTU program is used to extract interface files from the STACK file REBUS generates during execution.

Given conventional assembly homogenized cross section data, ARC can be used to perform fuel cycle analysis with follow on perturbation and sensitivity calculations.

All non - U.S. government funded license requests should be redirected to nera-software@anl.gov

Included in the package are the referenced documents and source transmitted on CD ROM in tar format. Fortran, Python, Linux PCs, MacOSX and SUN, (C00824MNYWS00).

SCIENCE EDUCATION PROGRAMS AT
OAK RIDGE NATIONAL LABORATORY

Looking for an internship or post-graduate opportunity at Oak Ridge National Laboratory? The Science Education Programs at Oak Ridge National Laboratory provide paid opportunities for undergraduates, grad students, recent graduates, and faculty to participate in high-quality research alongside world-class scientists to solve real-world problems. Opportunities are available for internships and co-ops, research appointments, and sabbaticals.

You can access all available opportunities through the website at http://www.orau.org/ornl. The Talent and Opportunity System allows you to create a profile, and then answer only 5 or 6 questions for each program or job posting for which you apply.

All levels of participants from undergraduates to faculty are encouraged to publish research papers with their mentors. Please browse through the Research Profiles on the different participants and their research experiences at the right hand side of the bottom of the web site listed above. Also, there is a video of research participants at ORNL sharing their thoughts on how access to world-class research facilities and staff has catapulted their careers in science and technology. You can find it on YouTube at http://ow.ly/2EQLz.

CONFERENCES, TRAINING COURSES,
SYMPOSIA

RSICC attempts to keep its customers and 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 via email walkersy@ornl.gov with "conferences" in the subject line by the 20th of each month. Please include the announcement in its native format as an attachment to the message. Please provide a website address for the event if one is available.

Every attempt is made to ensure that the links provided in the Conference and Calendar sections of this newsletter are correct; however, if the links become unavailable, please call the point of contact for the event.

CONFERENCES

PHYTRA3

3rd International Conference on Physics and Technology of Reactors and Applications

The 3rd edition of the conference PHYTRA will be held **May 12-14, 2014** in Tetouan, Morocco. PHYTRA3 is expected to be an outstanding international event in the MENA region which provides an opportunity for researchers, academicians and practitioners in the field of physics and technology of reactors to gather, exchange ideas, and present original research contributions and best practices.

For up-to-date information about this conference, visit their website at http://www.gmtr-association.com/phytra3/.

41st IEEE International Conference on Plasma Science (ICOPS) and the 20th International Conference on High Power Particle Beams (BEAMS)

The 41st IEEE International Conference on Plasma Science (ICOPS) and the 2th International Conference on High Power Particle Beams (BEAMS) will be held **May 25-29, 2014** at the Marriot Wardman Park, Washington, DC. This joint meeting will cover a range of scientific material in the fields of both plasma science and high power particle beams. In addition to the material traditionally covered in these conferences, two mini-courses will also be offered, on the topics of Low Temperature Atmospheric Pressure Plasmas and Atomic and Radiation Physics.

For update-to-date information about his conference, visit their website at http://www.ece.unm.edu/icops-beams2014/.

9th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications

The International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications (IRRMA) will be held **July 6-11, 2014** at the Universidad Politécnica de Valencia, Valencia, Spain. This triennial event is organized with the purpose of bringing together scientists and engineers from around the world who share an interest in radiation and radioisotope measurement applications.

For update-to-date information about his conference, visit their website at
 http://irrma-9.webs.upv.es/index.html.

2014 IEEE Nuclear and Space Radiation Effects Conference

The 2014 IEEE Nuclear and Space Radiation Effects Conference will be **July 14-18, 2014** at the Marriott Rive Gauche, Paris, France. The conference features a technical program consisting of eight to ten technical sessions of contributed papers describing the latest observations in radiation effects, a Short Course on radiation effects offered on July 14, a Radiation Effects Data Workshop, and an Industrial Exhibit.

For update-to-date information about his conference, visit their website at http://www.nsrec.com/.

19th Pacific Basin Nuclear Conference

The 19th Pacific Basin Nuclear Conference will be held **August 24-28, 2014** at the Hyatt Regency Hotel, Vancouver, British Columbia, Canada. The conference will showcase the advancement of nuclear technology in power generation, health science, and environmental stewardship. Challenges facing nuclear technology will be discussed as well as future development. The conference features ten Technical Tracks, covering all aspects of nuclear technology.

For up-to-date information about this conference, visit their website at www.pbnc2014.org.

8th International Conference on High Levels of Natural Radiation and Radon Areas

The 8th International Conference on High Levels of Natural Radiation and Radon Areas (8 ICHLNRRA) will be held in Prague, Czech Republic from **September 1-5, 2014**. It will be organized by the International Committee on High levels of Natural Radiation and Radon Areas (ICHLNRRA) in cooperation with the Czech Technical University through the Department of Dosimetry and Applications of Ionizing Radiation. High level natural background radiation and radon areas in many parts of the world provide ample opportunities to researchers to measure low dose chronic environmental radiation exposure indoors and outdoors and investigate their effects on human population as well as non-human species. In this context, some International Conferences on High Levels of Natural Radiation and Radon Areas have been held in the past in Brazil (1977), India (1981), Iran (1990), China (1996), Germany (2000), Japan

(2004) and India (2010). In extending our invitation, we request all the scientists and researchers as well as graduate students involved in the field of high background radiation areas and related fields of dosimetry and public dose and health assessment to actively participate in this conference and share their wealth of information/findings and put forth their suggestions to tackle the unresolved issues.

For up-to-date information about this conference, visit their website at
http://www.ichlnrra2014prague.cz/

23rd International Conference Nuclear Energy for New Europe

In 2014, the Nuclear Society of Slovenia will organize the 23rd International Conference Nuclear Energy for New Europe. The conference will be held in the attractive maritime resort of Portorož, Slovenia, during **September 8-11, 2014**.

The conference is a traditional annual meeting of professionals from nuclear research and educational institutions, nuclear vendors, utilities and regulatory bodies. It attracts around 200 participants from more than 20 countries. The topics discussed are general and include reactor physics, thermal hydraulics, probabilistic safety assessment, severe accidents, nuclear fusion, nuclear power plant operation, nuclear materials, waste management and new reactor designs.

For up-to-date information about this conference, visit their website at www.nss.si/nene2014/.

18th Topical Meeting of the ANS Radiation Protection & Shielding Division

The 18th Topical Meeting of the Radiation Protection & Shielding Division of ANS will be held **September 14-18, 2014** at the Hilton Downtown, Knoxville, Tennessee USA. The conference explores the scientific, technological and engineering issues associated with particle and ionizing radiation shielding in its broadest context, including nuclear energy systems, accelerator facilities, space and other radiation environments.

For up-to-date information about this conference and the Call for Papers, visit their website at www.rpsd2014.org .

PHYSOR 2014 International Conference

The ANS Reactor Physics Topical Meeting will be held at The Westin Miyako, Kyoto, Japan **September 28 – October 3, 2014.** The technical program will include timely and relevant special topics. Students will be actively involved in all technical events and activities. Exciting workshops and technical tours will be also offered.

For up-to-date information about this conference, visit their website at http://physor2014.org/#.

4th International Conference on Nuclear & Renewable Energy Resources (NURER2014)

This event will consist of a knowledge-based and comprehensive scientific program, featuring oral and poster presentations with possible commercial exhibitions from energy and publishing sectors. Thus, it will provide a good opportunity to become familiar with the most recent R&D tools in innovative nuclear and renewable energy systems, as well as looking at cutting-edge ideas on a sound scientific-technical basis. The aim is to combine the intellectual debates on the leading practical applications on nuclear and non-nuclear technologies, such as hydrogen energy, wind energy, solar concentrating systems, PVs, power systems, alternative energy tools, deep space exploration, etc. This conference will take place **October 26-29, 2014** in Antalya, Turkey.

For up-to-date information about this conference, visit their website at www.nurer2014.org.

The 17th International Conference on Emerging Nuclear Energy Systems (ICENES2015)

This conference will consist of an informative and comprehensive scientific program, featuring oral and poster presentations and a commercial exhibition. This will provide a unique opportunity to become familiar with the most recent advancements in innovative nuclear energy systems, as well as looking at "bold" and "unthinkable" ideas on a sound scientific-technical basis. The forum will also be open to intellectual debate leading to practical applications around innovative non-nuclear technologies, such as hydrogen energy, solar energy, deep space exploration and others. This conference will take place **May 10-14, 2015** inclusive, in Antalya, Turkey.

For up-to-date information about this conference, visit their website at http://www.icenes2015.org.

TRAINING COURSES

LANL MCNP6 Class Schedule

Date	Course Name and Description	Location	Cost
April 28 – May 2, 2014	Introduction to MCNP6 Non-US citizens must register 2014-02-24 Min 8 students – Max 15 Mon 12:30 – Fri 12:00	Los Alamos, NM	$1,900 or $1,600*
June 2-6, 2014	Introduction to MCNP6 Non-US citizens must register 2014-03-31 Min 8 students – Max 15 Mon 12:30 – Fri 12:00	Los Alamos, NM	$1,900 or $1,600*
August 4-8, 2014	Criticality Calculations with MCNP6 Non-US citizens must register 2014-06-02 Min 8 students – Max 15 Mon 12:30 – Fri 12:00	Los Alamos, NM	$1,900 or $1,600*
August 11-15, 2014	Variance Reduction with MCNP6 Non-US citizens must register 2014-06-09 Min 8 students – Max 15 Mon 12:30 – Fri 12:00	Los Alamos, NM	$1,900 or $1,600*
August 18-22, 2014	Introduction to MCNP6 Non-US citizens must register 2014-06-16 Min 8 students – Max 15 Mon 12:30 – Fri 12:00	Los Alamos, NM	$1,900 or $1,600*
October 20-24, 2014	Introduction to MCNP6 Non-US citizens must register 2014-08-18 Min 8 students – Max 15 Mon 12:30 – Fri 12:00	Los Alamos, NM	$1,900 or $1,600*

*Early payment discount: A discount of $300 per student is given when the registration payment is received in full at least 4 weeks prior to the start of class.

Introductory classes are for those who have little or no experience with MCNP. This class surveys the features of MCNP so the beginning user will be introduced to the capabilities of the program, and will have hands-on experience at running the code to solve simple problems. Course topics include Basic Geometry, Source Definitions, Output (Tallies), Advanced Geometry (repeated structures specifications), Variance Reduction Techniques, Statistical Analysis, Criticality, Plotting of Geometry and Tallies, and Neutron / Photon / Electron Physics.

Intermediate workshops cover the entire spectrum of MCNP/MCNPX, but proceed at a much faster pace and are more in-depth than the introductory classes. These workshops are open to new users; the first day of class is a review of basics. However, the intermediate workshops are targeted toward more experienced users and are more problem solving than lecture classes. Intermediate workshops feature

flexible course content, skip topics of least interest to the participants, and provide significantly more depth than introductory classes.

Advanced classes- Variance Reduction and Criticality are for people with MCNP experience who want to extend their knowledge and gain depth of understanding. Most areas of MCNP operation will be discussed in detail, with emphasis on Advanced Geometry, Advanced Variance Reduction Techniques, and other advanced features of the program. Time will be available to discuss approaches to specific problems of interest to participants. Classes on specific topics are offered when there is sufficient interest.

Note: While MCNP supports a number of platforms, LANL class computers are Windows based.

More information about the MCNP courses at LANL is available on their website at
https://laws.lanl.gov/vhosts/mcnp.lanl.gov/classes/classinformation.shtml.

MCNP6, Penelope, and Visual Editor Training

Classes are taught using the most recent (beta) version of the Visual Editor Code. All class attendees must have a valid MCNP/MCNPX RSICC license. Bring proof of receipt (letter or email) to the class.

Visual Editor Classes 2014		
April 14-18, 2014	Beginning Visual MCNP	Las Vegas, NV
April 21-25, 2014	Intermediate Visual MCNP	Las Vegas, NV
May 19-23, 2014	Beginning Visual MCNP	Cebu, Philippines
May 26-30, 2014	Intermediate Visual MCNP	Cebu, Philippines
June 16-20, 2014	Beginning Visual MCNP	Barcelona, Spain
June 30-July 4, 2014	Intermediate Visual MCNP	Barcelona, Spain
July 14-18, 2014	Beginning Visual MCNP	Anaheim, CA
July 21-25, 2014	Intermediate Visual MCNP	Anaheim, CA
August 11-15, 2014	Beginning Visual MCNP	Orlando, FL
August 18-22, 2014	Intermediate Visual MCNP	Orlando, FL
September 1-5, 2014	Beginning Visual MCNP	Montreal, Canada
September 8-12, 2014	Intermediate Visual MCNP	Montreal, Canada
September 22-26,2014	Beginning Visual MCNP	Myrtle Beach, SC
September 29- October 3, 2014	Intermediate Visual MCNP	Myrtle Beach, SC
October 13-17, 2014	Beginning Visual MCNP	Barcelona, Spain

October 20-14, 2014	Intermediate Visual MCNP	Barcelona, Spain
December 1-5, 2014	Beginning Visual MCNP	Vienna, Austria
December 8-12, 2014	Intermediate Visual MCNP	Vienna, Austria

The introductory workshops combine teaching on MCNP basics and how to create MCNP input files using the Visual Editor. The intermediate Visual Editor workshops focus on more advanced topics such as tallies and variance reduction using the Visual Editor.

Exercises will focus on creating input files and visualizing output data with the Visual Editor. Attendees are encouraged to bring their own input files for viewing and modifying in the Visual Editor; this is particularly important for the intermediate workshop.

The course description and registration information can be found at
http://www.mcnpvised.com/index.html.

MCNP6 Workshops 2014		
March 31- April 4, 2014	MCNP6 Intermediate Workshop (The NEA handles registration for this class.)	Paris, France
May 5-9, 2014	MCNP6 Intermediate Workshop	Livermore, CA
June 23-27, 2014	MCNP6 Intermediate Workshop	Barcelona, Spain
August 25-29, 2014	MCNP6 Intermediate Workshop	Washington, DC
October 27-31, 2014	MCNP6 Intermediate Workshop	Barcelona, Spain

MCNP6 experts from Los Alamos will lead in the teaching of these workshops on the capabilities of MCNP6.

Intermediate Workshops cover the entire spectrum of MCNP6 but proceed at a much faster pace and are more in-depth than Introductory Classes. These workshops are open to new users; the first day is a review of basics. However, the intermediate workshops are targeted toward more experienced users and are more problem solving than lecture classes. Intermediate workshops feature flexible course content, skip topics of least interest to the participants, and provide significantly more depth than introductory classes.

Penelope Workshop 2014		
April 28-May 2, 2014	Penelope	Las Vegas, NV

The list of workshops is tentative, as workshops may be added, removed, or modified throughout the year, depending on user interests. Workshops with fewer than 12 registrants on the early registration date are subject to cancellation or rescheduling.

In order to process non-U.S. citizens by the class date, non-U.S. citizens must register at least 6 weeks prior to the start of the training class. All non-U.S. citizens who reside in countries listed in the U.S. Code

of Federal Regulations, Title 10, Part 810.8, are required to register at least 8 weeks prior to the start of the training class. These participants must be processed by the DOE and should not make travel arrangements until approval from DOE has been obtained.

Additional information about the courses can be found at the website, http://www.mcnpvised.com/train.html.

To register send an email to Randy Schwarz at randyschwarz@mcnpvised.com, indicating the workshop of interest to you.

NEA Nuclear Energy Agency

Class sizes are limited and courses may be cancelled if minimum enrollment is not obtained one month prior to course. Course fees paid are refundable up to one month before each class.

Please note that all attendees must be registered users.

Date	Class	Course Content	Price	Location
7-11 April 2014	SCALE/TRITON Lattice Physics and Depletion	Course description To register, click here	2000 Euros	Paris, France
14-16 April 2014	SCALE/ORIGEN Standalone Fuel Depletion, Activation, and Source Term Analysis	Course description To register, click here	1500 Euros	Paris, France

* The fee includes the training course, luncheons and coffee breaks.

Contact: programs@oecd-nea.org

SYMPOSIA

The 15th International Symposium on Reactor Dosimetry (ISRD-15)

The 15th International Symposium on Reactor Dosimetry (ISRD-15) will take place from May 18-23, 2014 at the Hotel Aquabella in Aix-en-Provence, France. The aim of the symposium is to bring together the communities involved in research, development and applications related to reactor dosimetry.

The symposium is jointly organized by the European Working Group on Reactor Dosimetry (EWGRD) and the Committee E10 on Nuclear Technology and Applications of the American Society for Testing and Materials (ASTM).

For more information regarding this meeting, visit their website at http://reactordosimetry.org/index.html.

2014 CALENDAR

May

3rd International Conference on Physics and Technology of Reactors and Applications (PHYTRA3), May 12-14, 2014, Tetouan, Morocco. For up-to-date information about this conference, visit their website at http://www.gmtr-association.com/phytra3/.

International Symposium on Reactor Dosimetry (ISRD-15), May 18-23, 2014, Aix-en-Provence, France. For up-to-date information about this conference, visit their website at http://reactordosimetry.org/index.html.

41st IEEE International Conference on Plasma Science (ICOPS) and the 20th International Conference on High Power Particle Beams (BEAMS), May 25-29, 2014, Washington, DC. For up-to-date information about this conference, visit their website at http://www.ece.unm.edu/icops-beams2014/.

June

2014 ANS Annual Meeting, Nuclear Challenges: Technologies and Analysis, June 15-19, 2014, Reno, Nevada. For up-to-date information about this conference, visit their website at: http://www.ans.org/meetings/c_1.

July

9th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications, July 6-11, 2014, Valencia, Spain. For up-to-date information about this conference, visit their website at http://irrma-9.webs.upv.es/index.html.

INMM 55th Annual Meeting, July 20-24, 2014, Atlanta, Georgia. For up-to-date information about this conference, visit their website at http://www.inmm.org//AM/Template.cfm?Section=Home.

2014 IEEE Nuclear and Space Radiation Effects Conference, July 14-18, 2014, Paris France. For up-to-date information about this conference, visit their website at http://www.nsrec.com/.

August

19th Pacific Basin Nuclear Conference, August 24-28, 2014, Vancouver, British Columbia, Canada. For up-to-date information about this conference, visit their website at www.pbnc2014.org.

September

Topical Meeting of the ANS Radiation Protection and Shielding Division (RPSD 2014), September 14-18, 2014, Knoxville, TN. For up-to-date information about this conference and the Call for Papers, visit their website at www.rpsd2014.org.

October

PHYSOR 2014, September 28 – October 3, 2014, Kyoto, Japan**.** For up-to-date information about this conference, visit their website at http://physor2014.org/#.

November

2014 ANS Winter Meeting and Nuclear Technology Expo, Nuclear – The Foundation of Clean Energy, November 9-13, 2014, Anaheim, CA. For up-to-date information about this conference, visit their website at http://www.ans.org/meetings/c_1.

December

WINS 2014 Workshop on Elastic and Inelastic Neutron Scattering, December 3-5, 2014, Dresden, Germany. For up-to-date information about this conference, visit their website at http://www.hzdr.de/db/Cms?pNid=3221.