Radiation Safety Information Computational Center

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"Getting over a painful experience is much like crossing monkey bars. You have to let go at some point in order to move forward." –C. S. Lewis

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CHANGES TO THE RSICC CODE AND DATA COLLECTION

There are two updates to the RSICC catalog for those individuals that may be interested.

CCC-839/MEGA

KAERI (Korea Atomic Energy Institute), Daejeon, South Korea, through the OECD NEA Data Bank, Boulogne-Billancourt, France, has contributed MEGA. MEGA is a mechanistic and engineering fission gas release prediction model for UO2 fuel. It is based upon the diffusional release of fission gases from inside the grain to the grain boundary, and the release of fission gases from the grain boundary to the external surface by an interconnection of the fission gas bubbles within the grain boundary. The MEGA model was validated by a comparison with the fission gas release data base and sensitivity analyses of the model parameters. It was found that the MEGA model could correctly predict the fission gas release in the broad range of a fuel burnup, up to 98 MWd/kgU. The enhancement of fission gas release in a high burnup fuel and the reduction of fission gas release at a high burnup by increasing the UO2 grain size are found to be correctly predicted by the MEGA model.

MEGA is distributed on a CD ROM and includes readme files, source files, batch and project files and sample problem input/output. Fortran, Shell Scripts; Linux, Mac and Windows (C839MNYCP00).

CCC-778/PHITS-2.82

PHITS-2.82 was contributed by the Research Organization for Information Science and Technology, Tokai, Ibaraki, Japan, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan, High Energy Accelerator Research Organization (KEK), Tsukuba, Ibaraki, Japan, Tokyo Institute of Technology, Tokyo, Japan, and Technische Universität Wien, Austria through the OECD NEA Data Bank, Boulogne-Billancourt, France. PHITS can deal with the transport of almost all particles (nucleons, nuclei, mesons, photons, and electrons) over wide energy ranges, using several nuclear reaction models and nuclear data libraries (Iwase et al 2002, Niita et al 2006, Sihver et al 2010, Niita et al 2010, and Sato et al 2013). Geometrical configuration of the simulation can be set with GG (General Geometry). Various quantities such as heat deposition, track length and production yields can be deduced from the simulation, using implemented estimator functions called "tally". The code also has a function to create 2D and 3D figures of the calculated results as well as the setup geometries, using the included code, ANGEL. The ability to read tetrahedral geometry (a kind of polygonal geometry) was implemented in PHITS-2.82. A model for describing nuclear resonance florescence (NRF) was also implemented along with a point estimator tally (t-point).

The package is transmitted on a DVD that includes the referenced documents, example problems, source code, and precompiled executables for Linux, MacOS and Windows. Fortran 77; Mac, Windows, Linux, UNIX Workstations (C778MNYCP04 NEADB ID: NEA-1857/005).

REGISTRATION REQUIREMENTS

RSICC does not permit individuals to “pre-register” or “pre-order” software for use at a temporary or alternate location. The single user license and export control agreements are specific to the individual’s end use and the location at which the software will be used. During the registration process, individuals are required to provide the name of the institution at which they will use the software, an institutional mailing address and an institutional e-mail address. As an example, students that work at a location other than their university are required to update their registration with RSICC and submit a new request for any software that they intend to use after they have begun work at the new location.

SINGLE-USER LICENSE AGREEMENT REVISED

The single-user license agreement has been revised to address concerns regarding changes in end-use and employment changes of individuals that have received packages from RSICC. In some instances individuals obtain approvals from our Federal regulators for use of software packages for very specific purposes or while employed or associated with specific organizations. To address this concern, the single-user license agreement has been modified to indicate that the license is only valid for the end-use as stated in the Licensee's request and only while associated with the organization under which the request is being made. After February 1, 2015, the individual's single-user license would no longer be valid if they change their end-use or are no longer associated with the organization for which they obtained the original license. In these cases, the individual would need to submit a new request to RSICC for the package for the new end-use or the new affiliation.

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

NENE 2016

Nuclear Society of Slovenia invites you to attend the traditional already 25th meeting of professionals from nuclear research organizations, educational institutions, nuclear utilities, industrial companies and regulatory bodies, held in the sea resort of Portorož, **September 5-8, 2016**. Special attention will be paid to 50 years of the Slovenian TRIGA reactor and role of research reactors to support nuclear energy. More information is available at www.nss.si/nene2016/ and nene2016@ijs.si.

ND2016

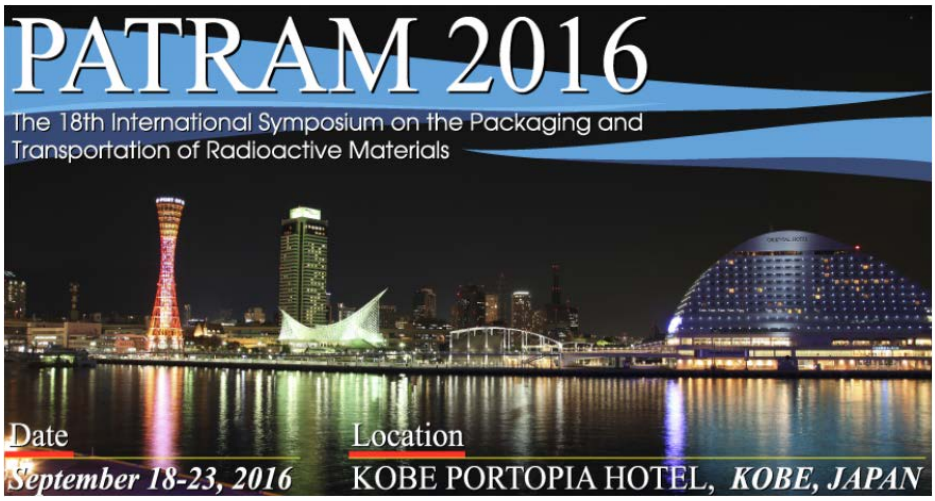
The next International Conference on Nuclear Data for Science and Technology will be held in Bruges, Belgium, **September 11-16, 2016**. ND2016 is the primary conference for the advancement of nuclear data in the interest of both science and technology. It addresses all important active fields of investigation: fundamental nuclear physics, astrophysics, nuclear energy, nuclear medicine, nuclear non-proliferation, safeguards and arms control. Please see their website for more details: http://www.nd2016.eu/.

3DSUNCOP-19

Seminar and training on Scaling Uncertainty and 3D Coupled Code Calculations in Nuclear Technology (3DSUNCOP-19) will be held in Vienna, Austria, **Sept. 12-30, 2016**. Please see their website for more information: http://nrgspg.ing.unipi.it/3dsuncop .

5th International Conference on Nuclear and Renewable Energy Resources (NURER2016)

The 5th International Conference on Nuclear and Renewable Energy Resources (NURER2016) hosted by Institute of Nuclear Energy Safety Technology, Chinese Academy of Sciences, in Hefei, Anhui, China, from **September 18-21, 2016**. Please see the website for more information. http://nurer2016.org.cn/dct/page/1.



PATRAM 2016

The 18th International Symposium on Packaging and Transportation of Radioactive Materials (PATRAM) will be held **September 18-23, 2016**, in Kobe, Japan. PATRAM brings together experts from governments, industries and research organizations worldwide to exchange information on all aspects of packaging and transport of radioactive materials around the globe. Please see their website for more details: http://www.patram2016.org/.

ICRS 13
RPSD 2016

October 3|6, 2016
Paris, France

ICRS 13 RPSD 2016

Paris is honored to host the joint conference 13th International Conference on Radiation Shielding (ICRS-13) & 19th Topical Meeting of the Radiation Protection & Shielding Division of the American Nuclear Society -2016 (RPSD-2016), from **October 3-6, 2016.** This 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, lasers, space, medical area and other radiation environments. It is one of the premier international events dedicated to this multidisciplinary radiation shielding field, regularly attracting hundreds of the world's top scientists and engineers. For more information, please visit their website: https://fr.amiando.com/icrs13-rpsd2016.html.

SATIF-13

13th Meeting of the task-force on Shielding Aspects of Accelerators, Targets, and Irradiation Facilities

The 13th meeting of the task force on Shielding Aspects of Accelerators, Targets and Irradiation Facilities (SATIF-13) will take place at the Helmholtz-Zentrum Dresden-Rossendorf (HZDR) in Dresden, Germany, **October 10-12, 2016**.

Keeping the original spirit of the SATIF Meetings, which have as main objectives the promotion of the information exchange and the international co-operation among experts in the field of accelerator, target and irradiation facilities shielding, we look forward to work with you to make this event an opportunity to progress in our common research field. The web site of SATIF-13 is https://www.hzdr.de/SATIF13.

Nuclear Knowledge Management

The Third International Conference on Nuclear Knowledge Management, Challenges and Approaches will be held **November 7-11, 2016** in Vienna, Austria. Detailed information can be found on their website http://www-pub.iaea.org/iaeameetings/50805/Third-International-Conference-on-Nuclear-Knowledge-Management-Challenges-and-Approaches. Please include reference number IAEA-CN-241 in all communications.

TRAINING COURSES

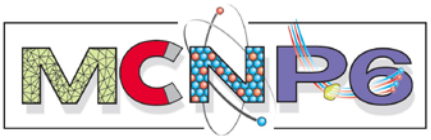
Safety Analysis Report for Packaging (SARP)
Analyst Course
Developed and Conducted by Oak Ridge National Laboratory

Radioactive Material Package Shielding Evaluation and Nuclear Criticality Safety Evaluation Training

The U.S. Department of Energy (DOE) Packaging Certification Program (PCP), Office of Packaging and Transportation, is offering Safety Analysis Report for Packaging (SARP) shielding and nuclear criticality safety (NCS) course for SARP analysts.

The Analysts Course will provide detailed training on the radioactive material package shielding analyses and NCS evaluation fundamentals needed by analysts/practitioners (i.e., safety analysts and/or technical reviewers) to prepare and/or review technical analyses for the SARP documentation. The Analyst Course also provides an overview of regulations and guidelines in addition to detailed in-class exercises associated with the package shielding and NCS analyses. With regard to the in-class exercises, analysis teams will be faced with "staged" SARP examples in which a number of important decision processes in the generation of a SARP will be demonstrated and discussed. The SARP Analyst Course is scheduled for **September 12-16, 2016** at Oak Ridge National Laboratory, Oak Ridge, TN. The registration cost for all students is $2000. Information regarding the course is available at the following website: https://public.ornl.gov/conferences/sarp2016/index.shtml, and registration link.

Please contact the ORNL SARP Course Point-of-Contact if you have questions about the course. Douglas G. Bowen, Oak Ridge National Laboratory, bowendg@ornl.gov,(865) 576-0315.



LANL MCNP6 Class Schedule for 2016

Website: https://laws.lanl.gov/vhosts/mcnp.lanl.gov/classes/classinformation.shtml

Oct 25-26, 2016 Los Alamos, NM	Using NJOY to Create MCNP ACE Files & Visualize Nuclear Data Non-US citizens must register by 2016-08-01 | Thursday 10:00 - Fri 5:00	$800 or $600*
Oct 31 - Nov 4, 2016 Los Alamos, NM	Introduction to MCNP6 Non-US citizens must register by 2016-08-08 | Mon 10:30 - Fri 12:00	$1800 or $1500*

MCNP6 Training

For more information, see the website: http://mcnpvised.com/train_mcnp.html

Current Classes (tuition for all US classes is $2300 with an early payment discount of $300)			
Date (Click Date for Info)	**Class**	**Course Content**	**Location**
October 10-14, 2016	**MCNP6® Intermediate Workshop**	**To see an outline for the course, Click Here.**	**Paris, France**
January 9-13, 2017	**MCNP6® Intermediate Workshop**	**To see an outline for the course, Click Here.**	**Las Vegas, NV**
March 27-31, 2017	**MCNP6® Intermediate Workshop**	**To see an outline for the course, Click Here.**	**Paris, France**
October 9-13, 2017	**MCNP6® Intermediate Workshop**	**To see an outline for the course, Click Here.**	**Paris, France**

MCNP6 Visual Editor Training

For more information, see the website: http://mcnpvised.com/train.html

September 19-23, 2016	Advanced Visual MCNP6® with Applications in Mesh Tallies and Variance Reduction.		Detailed Description	Las Vegas, NV
October 17-21, 2016	Beginning Visual MCNP6®. The NEA handles registration for this course. Click here to register.		Detailed Description	Paris, France
January 2-6, 2017	Beginning Visual MCNP6®		Detailed Description	Las Vegas, NV
January 30-February 3, 2017	Intermediate Visual MCNP6® for Shielding Calculations		Detailed Description	Richland, WA
February 6-10, 2017	Intermediate Visual MCNP6® for Criticality Calculations		Detailed Description	Richland, WA
February 13-17, 2017	Intermediate Visual MCNP6® for Medical Physics Calculations		Detailed Description	Richland, WA
April 3-7, 2017	Beginning Visual MCNP6®. The NEA handles registration for this course.		Detailed Description	Paris, France
May 15-19, 2017	Beginning Visual MCNP6®		Detailed Description	Las Vegas, NV
May 22-26, 2017	Advanced Visual MCNP6® with Applications in Mesh Tallies and Variance Reduction.		Detailed Description	Las Vegas, NV

September 11-15, 2017	**Beginning Visual MCNP6®**	LEVEL 1	**Detailed Description**	**Las Vegas, NV**
September 18-22, 2017	**Advanced Visual MCNP6® with Applications in Mesh Tallies and Variance Reduction.**	LEVEL 4	**Detailed Description**	**Las Vegas, NV**
October 2-6, 2017	**Beginning Visual MCNP6®. The NEA handles registration for this course.**	LEVEL 1	**Detailed Description**	**Paris, France**

NEA Nuclear Energy Agency

This workshop combines teaching by the authors on program physics, along with instructions on how to use the software. The course includes a large number of practical exercises.

Should you be interested in attending, information is available at:

http://www.oecd-nea.org/dbprog/trainingcourses.htm or contact: programs@oecd-nea.org.

Courses scheduled for 2016 will take place at the new address (provided in registration forms). Please note that all attendees must be registered users.

Date	Class	Course Content	Price	Location
10-14 October 2016	MCNP6 intermediate	Course description To register, click here	2200 EUR	Paris, France
17-21 October 2016	Beginning Visual MCNP6	Course description To register, click here	2200 EUR	Paris, France

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

Contact: programs@oecd-nea.org

SYMPOSIA

2016 CALENDAR

September

IAEA General Conference, September 26-30, 2016, Vienna, Austria. See website for more information.

October

26th IAEA Fusion Energy Conference, October 17-22, 2016, Kyoto, Japan. See website for more information.

November

Nuclear Science and Technology Symposium (NST2016), November 2-3, 2016, Helsinki, Finland. See website for more information.

2016 American Nuclear Society (ANS) Winter Meeting and Nuclear Technology Expo. November 6-10, 2016, Las Vegas, NV.

International Conference on the Safety of Radioactive Waste Management, November 21-25, 2016, Vienna, Austria.. See website for more information.

2017 CALENDAR

May

2017 International Symposium on Reactor Dosimetry, ISRD-16. May 7-12, 2017, Santa Fe, New Mexico. See website for more information http://reactordosimetry.org.

June

2017 American Nuclear Society (ANS) Annual Meeting. June 11-15, 2017, San Francisco, CA.

July

62nd Annual Health Physics Society (HPS) Meeting. July 9-13, 2017, Raleigh, NC.

October

2017 American Nuclear Society (ANS) Winter Meeting and Nuclear Technology Expo. October 29-November 2, 2017, Washington, DC.

2018 CALENDAR

June

2018 American Nuclear Society (ANS) Annual Meeting, June 17-21, 2018, Philadelphia PA.

November

2018 American Nuclear Society (ANS) Winter Meeting, November 11-15, 2018, Orlando, FL.