Radiation Safety Information Computational Center

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Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young. The greatest thing in life is to keep your mind young.— Henry Ford

CHANGES TO THE RSICC CODE AND DATA COLLECTION

CCC-793/AMP
Oak Ridge National Laboratory, Oak Ridge, TN, USA; Los Alamos National Laboratory, Los Alamos, NM, USA; and Idaho National Laboratory, Idaho Falls, ID, USA have contributed the Advanced Multi-Physics (AMP) code. AMP is a general purpose, multi-physics computational environment with implementations of coupled diffusion, mechanics, and fluid dynamics. The AMP code, in its present form, will allow a user to build a multi-physics application code from existing mechanics and diffusion operators and extend them with user-defined material models and new physics operators. There are examples that demonstrate mechanics, thermo-mechanics, coupled diffusion, and mechanical contact. The AMP code is designed to leverage a variety of mathematical solvers (PETSc, Trilinos, SUNDIALS, and AMP solvers) in a consistent interchangeable approach. AMP supports a variety of algorithms, with initial implementation of continuous finite-element primarily solved with a Jacobian-Free Newton Krylov approach.

The package will be transmitted in a GNU compressed Unix tar file which includes source code, user manual, and sample problems. C, C++, F90, Python; Linux and Mac (C00793PCX8600).

PSR-497/EMPIRE II

EMPIRE II was contributed by the International Atomic Energy Agency, Vienna, Austria, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Molineaux, France. EMPIRE-II is a flexible code for calculation of nuclear reactions in the frame of combined optical, multistep direct (TUL), multistep compound (NVWY) and statistical (Hauser-Feshbach) models. Incident particle can be a nucleon or any nucleus (heavy ion). Isomer ratios, residue production cross-sections and emission spectra for neutrons, protons, alpha-particles, gamma-rays, and one type of light ion can be calculated. The energy range starts just above the resonance region for neutron induced reactions and extends up to several hundreds of MeV for the heavy ion induced reactions.

The EMPIRE II package is transmitted on DVD and includes the referenced documents, source code, scripts, and test problems. No executables are included with the package. FORTRAN and C; Linux and Windows (P00497PC58601).

PSR-305/EXIFON2.0

The Technische Universität, Dresden, Germany, through OECD Nuclear Energy Agency Data Bank, Issy-les-Moulineaux, France, has released EXIFON2.0, the latest version of EXIFON GAMMA. The EXIFON code is based on an analytical model for statistical multistep direct and multistep compound reactions (SMD/SMC model). It predicts emission spectra, angular distributions, and activation cross-sections for neutrons, protons, alpha particles, and photons. Multiple particle emissions are considered for up to three decays of the compound system. EXIFON is a fast, easy-to-handle code which predicts cross-sections from one global parameter set. The only adjustable quantity is the pairing shift. The INPEXI code creates input files for EXIFON2.0 from mass and shell-correction tables. The MAKE6 code transforms EXIFON output into an ENDF-6 format file. The model is based on random matrix physics with the use of the Green's function formalism. All calculations are performed without any free parameters. Results are presented for bombarding energies below 30 MeV.

EXIFON2.0 runs on an IBM PC and compatibles with a math co-processor.

The package includes the referenced documents, executables, source code, and sample input and output files in a self-extracting file. FORTRAN 77; IBM PC/XT; IBM PC/AT (P00305IPCXT01).

DLC-258/MATXSLIBJ33

The Japan Atomic Energy Research Institute, Tokai-mura, Naka-gun, and Ibaraki-ken, Japan, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Moulineaux, France, have contributed the MATXSLIBJ33 library. MATXSLIBJ33 is the MATXS multigroup cross-section library based on the JENDL-3.3 evaluation. It is provided in the VITAMIN-J 175 neutron/42 gamma-ray group evaluation. NJOY-99.67 was used to produce MATXSLIBJ33.

The data libraries and documents are transmitted on DVD. Unix workstation and PC (D00258MNYCP00).

DLC-255/ORLIBJ32

Tokai Research Establishment; Japan Atomic Energy Research Institute, Tokai-mura, Naka-gun, Japan; O-arai Engineering Center; Japan Nuclear Cycle Development Institute (JNC); O-arai-machi; Higashi-Ibaraki-gun, Japan; Mitsubishi Heavy Industries, Ltd. (MHI), Yokohama-shi, Japan; Central Research Institute of Electric Power Industry; and Komae-shi, Tokyo, Japan, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Moulineaux, France, have contributed the ORLIBJ32 libraries. ORLIBJ32 is a package of libraries for the ORIGEN2 code based on JENDL-3.2. The one-grouped cross-section data for PWRs and BWRs were compiled using the burnup calculation results from the SWAT code. The FBR libraries were compiled by the analysis system used in JNC for FBR core calculations. The fission yield and decay constants data were also updated using the second version of the JNDC FP library.

The set of libraries for the ORIGEN2 code, "ORLIBJ32 1.1 and ORLIBJ32 1.3" were developed based on JENDL-3.2 using the latest core parameters. The targets are the 17×17 fuel assemblies for PWRs, and Step I, II, or III assembly for BWRs. For FBR libraries, several types of cores and fuels were taken for targets and libraries for not only cores but also blanket regions were developed. To make the libraries for LWRs, the integrated burnup code system, SWAT, was used adopting the single pin cell model. For making the FBR libraries, the new system was developed based on the core calculation system used in JNC.

The ORLIBJ32 package is transmitted on DVD and includes Windows self-extracting executables, Linux formatted tgz files, source code files, data, sample input problems, sample output, and reference materials. Uncompressed files for each library are about 90 MB. FORTRAN 77; Unix Workstation, PC, and Mac (D00255MNYCP00).

CCC-798/PVIS-4

VTT Processes, FI-02044 VTT, Finland, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Moulineaux, France, has contributed PVIS-4, Pressure Vessel Irradiation Source. The program prepares a fixed neutron source distribution in radial, (r,theta), (r,z), or (r,theta,z) geometry for ANISN, DORT, or TORT. The user can input the source distribution in some relatively compact form (typically a few variables defining the spectrum, 10 values for the axial source distribution, and for the horizontal distribution, the values at the center and corners of each of the outermost fuel bundles and the average value for each interior bundle). The program then creates the required source arrays, such as 96*, 97*, and 98* arrays for DORT.

The package is distributed on CD and contains source code, sample input and output, and reference materials. FORTRAN 77; Linux and Unix (C00798MNYCP00).

PSR-573/SAEROSA

The University of Massachusetts, Lowell, Radiological Program, Lowell, MA, USA; Los Alamos National Laboratory, Los Alamos, NM, USA; and Louisiana State University, Baton Rouge, LA, USA have contributed SAEROSA: Single-Species Aerosol Coagulation and Deposition with Arbitrary Size Resolution. SAEROSA solves the dynamic aerosol coagulation and deposition problem with arbitrary computational precision under a variety of conditions. The code includes numerous user-selectable coagulation kernels, alone or in combinations, and permits an arbitrary initial size distribution. Many parameter combinations and what-if scenarios under user control are possible. The output gives the particle size distribution suspended in the carrier fluid initially and after the desired aerosol aging time in terms of both differential and integral aerosol volume concentrations. An auxiliary routine designed for the Mac OSX environment provides plotting capability. The output can be further processed by e.g., spreadsheets.

The code has been benchmarked against three computer models, including MAEROS and analytical models with excellent agreement. The test cases also included scenarios where previously published computational coagulation models lack capabilities or exhibit numerical instabilities. These included narrow, delta function, and non-lognormal initial size distributions, and further conditions, such as the presence of simultaneous coagulation mechanisms, including electrostatic effects and spanning multiple flow-regimes.

The package is transmitted on CD and contains precompiled executables for Linux, Mac OS, and Windows systems, source code, sample problems, and documentation. FORTRAN; PC, Linux, Mac, and Sun (P00573MNYCP00).

DLC-231/WLUP 3.0

The International Atomic Energy Agency (IAEA), Nuclear Data Section, Vienna, Austria, through the OECD Nuclear Energy Agency Data Bank, Issy-les-Moulineaux, France, has contributed these 69 and 172 group cross-section libraries for WIMS. WLUP contains validated WIMS-D formatted cross-section libraries in 69 and 172 energy group structures for nuclear reactor calculations. Included are materials from recently released evaluated nuclear data libraries such as JEFF-3.1, JEF-2.2, JENDL-3.2, and ENDF/B-VI Rev 8.

The WIMS Library Update Project (WLUP) was organized by the Nuclear Data Section of the IAEA. The "Jozef Stefan" Institute was supported by the IAEA through a research contract to coordinate the technical issues related with the project. The NJOY nuclear data processing system was applied for generating the cross-section files following the models and conventions built into the WIMS-D lattice code. WLUP is an interactive HTML type file system. The package includes:

- WIMSD-IAEA 69 group library prepared from selected evaluated data files,
- WIMSD-IAEA 172 group library prepared from selected evaluated data files,
- IAEA-Technical Report with detailed documentation,
- Data processing inputs for NJOY and WILLIE,
- Benchmark inputs models for WIMS, and
- System of auxiliary codes developed under the Coordinated Research Project.

This version differs from the previous one in the following (includes changes up to 28 January 2008):

- WIMS-D library based on ENDF/B-VII data was incorrect. Only the Th-232 and Pa-231, 233 data are affected,
- Corrected WIMSD libraries based on the ENDF/B-VII.0 data were uploaded,
- Plots were updated,
- The differences between the original and the corrected results for the standard benchmarks can be seen in E70_bug.lst,
- New WIMSD libraries were added based on the ENDF/B-VII.0 library,
- Some programs, procedures, and data files were updated,
- The IAEA evaluated nuclear data files were uploaded to the website, and
- New list files were added to the XnWlup package.

WLUP is accessible under DOS, Windows, Unix, and Linux. The data libraries and documentation are transmitted on one CD. FORTRAN (D00231MNYCP01).

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 have catapulted their careers in science and technology. You can find it on YouTube at http://ow.ly/2EQLz.

CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users 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 to bennas@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. If the meeting is on a website, please include the url.

Every attempt is made to ensure that the links provided in the Conference and Calendar sections of this newsletter are correct and live. However, the very nature of the web creates the possibility that the links may become unavailable. In that case, please call or mail the contact provided.

TRAINING

MCNPX 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.

2012 Classes for Visual Editor		
August 27-31	Introduction to MCNP/MCNPX using the MCNPX Visual Editor	Albuquerque, NM
September 10-14	Introduction to MCNP/MCNPX using the MCNPX Visual Editor	Myrtle Beach, SC

2012 Classes for Visual Editor		
September 17-21	Intermediate MCNPX Visual Editor with a special emphasis on tallies and variance reduction	Myrtle Beach, SC
October 15-19	Introduction to MCNP/MCNPX using the MCNPX Visual Editor	Paris, France
November 5-9	Introduction to MCNP/MCNPX using the MCNPX Visual Editor	Las Vegas, NV
November 12-16	Intermediate MCNPX Visual Editor with a special emphasis on tallies and variance reduction	Las Vegas, NV

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.

MCNPX Classes 2012-13		
September 24-28	MCNP/MCNPX Intermediate Workshop	Washington, DC
October 22-26	MCNP/MCNPX Intermediate Workshop	Paris, France
January 14-18, 2013	MCNP/MCNPX Intermediate Workshop	Las Vegas, NV

The MCNPX team at Los Alamos National Laboratory offers interactive workshops for training users in the capabilities of MCNPX at the intermediate level.

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

General Course on Monte Carlo N-Particle (MCNP) Transport Code
2012-13– MCNP Class Schedule

Date	Course name and description	Location	Cost
October 29-November 2	**Introduction to MCNP6** Registration is open to all. Non-U.S. citizens must register by 8/31/12. Minimum of 8 students-Maximum of 15, Monday 12:30 p.m. - Friday 12:00 p.m.	Los Alamos, NM	$1,900 or $1,600*
December 3-7	**Variance Reduction with MCNP6** Registration is open to all. Non-U.S. citizens must register by 10/08/12. Minimum of 8 students-Maximum of 15, Monday 12:30 p.m. - Friday 12:00 p.m.	Los Alamos, NM	$1,900 or $1,600*
December 10-14	**Criticality Calculations with MCNP6** Registration is open to all. Non-U.S. citizens must register by 10/15/12. Minimum of 8 students-Maximum of 15, Monday 12:30 p.m. - Friday 12:00 p.m.	Los Alamos, NM	$1,900 or $1,600*
January 28-February 1, 2013	**Introduction to MCNP6** Registration is open to all. Non-U.S. citizens must register by 11/26/12. Minimum of 8 students-Maximum of 15, Monday 12:30 p.m. - Friday 12:00 p.m.	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 proceeds at a much faster pace and is 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.

Fall 2012 SCALE Training Courses

Date	Title	Location	Registration Fee
October 8-12	SCALE Criticality Safety Calculations Course *Introductory through advanced criticality calculations using KENO V.a and KENO-VI; Resonance self-shielding techniques*	ORNL Oak Ridge, TN, USA	$2000
October 15-19	SCALE Criticality and Shielding Course *Basic criticality calculations with KENO-VI; shielding analysis with automated variance reduction using MAVRIC; criticality accident alarm system analysis*	ORNL Oak Ridge, TN, USA	$2000
October 22-26	SCALE Lattice Physics and Depletion Course *2D lattice physics calculations; 1D, 2D, and 3D depletion calculations; resonance self-shielding techniques including Monte Carlo Dancoff factors for non-uniform lattices; generation of libraries for ORIGEN-ARP*	ORNL Oak Ridge, TN, USA	$2000
October 29-31	SCALE/ORIGEN Activation and Decay Calculations Course *Isotopic depletion/decay and source term characterization using ORIGEN/ORIGEN-ARP*	ORNL Oak Ridge, TN, USA	$1500

Foreign National Visitors: You **must** register **at least 40 days** in advance to obtain security clearance.

Payment must be received at least one week prior to training course.

For more information and online registration, please visit http://scale.ornl.gov/training.shtml

Health Physics and Radiation Safety Training at the Oak Ridge Associated Universities (ORAU) Professional Training Program

ORAU provides a comprehensive suite of health physics services in an integrated program that is tailorable to your exact needs. Since 1948, ORAU Professional Training Programs have been providing technical training in the radiological sciences.

Course	Dates
Medical Radiation Safety Officer Training	August 20-24, 2012
Multi-Agency Radiation Survey and Assessment of Materials and Equipment (MARSAME)	August 27-30, 2012
Applied Health Physics	September 10 - October 12, 2012
Air Sampling for Radioactive Materials	October 29 - November 2, 2012
Introduction to Radiation Safety	November 5-9, 2012
MARSSIM	November 12-16, 2012
Gamma Spectroscopy	December 3-7, 2012

If you wish to discuss having a customized course delivered at your site, please contact Paul Frame at 865-576-3388 or Paul.Frame@orau.org.

CONFERENCES

ICRS-12 and RPSD-2012

The 12th International Conference on Radiation Shielding (ICRS-12) and the 17th Topical Meeting of the Radiation Protection and Shielding Division of the American Nuclear Society (RPSD-2012) will be held in Nara, Japan, September 2-7, 2012. The first ICRS conference was held in 1958 at Cambridge, United Kingdom. Since then, ICRS has been held in Europe, Japan, and the United States. The ICRS series occurs every four or five years.

This conference, organized by the Atomic Energy Society of Japan, will explore 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. It is one of the premier international radiation shielding events, regularly drawing hundreds of the world's top scientists and engineers.

The conference will open with a special session summarizing the facts and circumstances surrounding the Fukushima accident and consequent environmental assessment and recovery. The special session will complement the conference topics.

Check the website http://www.icrs12.org or contact ICRS-12 & RPSD-2012 Local Organizing Committee secretariat (office@icrs12.org) for further information.

ICFO-SI9

The 9th International Conference on Facility Operations- Safeguards Interface (ICFO-SI9) will be held on September 23-28, 2012, in Savannah, Georgia. The topical conference program committee invites individuals with professional interest in safeguards technology and nuclear material facility operations to participate. The Conference is sponsored by the American Nuclear Society Isotopes and Radiation Division, Oak Ridge/Knoxville Local Section and is cosponsored by the Institute of Nuclear Materials Management, Central Region Chapter, Southeast Chapter.

The purpose of the conference is to foster a better understanding of the relationships of operations in nuclear facilities and the application of safeguards under national and international regimes. This ninth conference in the series will provide an international forum for exchanging ideas and experiences, as well as describing progress in the areas of safeguards implementation. The conference will be timely considering the current activities to strengthen the international safeguards regime. The four and a half day conference will be held in nine half-day sessions at which policy, technical, and scientific aspects of safeguards implementation will be discussed.

Papers are encouraged in the following areas:

- Integrated design of facility safeguards systems,
- Nuclear material accountancy,
- Materials control and accountability activities,
- Measurement and instrument techniques,
- Transparency and confidence-building measures,
- Research and development in general safeguards technology,
- Extension of safeguards in light of the threat of radiological dispersal devices,
- Preparation for and implementation of the IAEA Additional Protocol,
- Safeguards by design,
- The impact of "fully information driven safeguards" on traditional safeguards,
- Advances in process monitoring, unattended measurements/monitoring, remote measurements/monitoring, and
- Application of safeguards earlier in the front end of the fuel cycle, mining and conversion.

Conference information is posted at the website at http://ICFO-9.org.

Wonder 2012: 3rd International Workshop on Nuclear Data Evaluation for Reactor Applications

The 3rd International Workshop on Nuclear Data Evaluation for Reactor Applications organized by the Commissariat à l'Energie Atomique and the Nuclear Energy Agency will be held on September 25-28, 2012, at the Hotel Aquabella in Aix-en-Provence, France (Southeast of France).

The main objective of the workshop is to review the current modeling and evaluation methods of nuclear data for reactor applications and to discuss possible areas of improvement.

The workshop will cover the following topics:

- Microscopic and integral nuclear data measurements;
- Evaluation of nuclear data (theories, models, codes);
- Uncertainties and covariance matrices;
- Neutron / gamma spectra and multiplicities;
- Processing and benchmarking; and
- Fission modeling

The number of participants is limited to 60 persons.

The workshop will include 30-minute sessions with presentations and discussions as well as space for posters during the workshop.

For up-to-date information about this workshop, please visit their website at http://www.oecd-nea.org/science/meetings/wonder2012/.

3D Coupled Code Calculations in Nuclear Technology

The seminar and training on Scaling, UNcertainty and 3D Coupled Code Calculations in Nuclear Technology will be held on November 5-23, 2012, Dubrovnik, Croatia.

The seminar will provide a transfer of experience and know-how from recognized experts in the fields of best estimate uncertainty methods, scaling analysis, system thermal-hydraulic calculations including 3D neutron kinetics coupling techniques.

Licensing aspects in connection with best estimate plus uncertainty methods will be widely discussed. The seminar will thus contribute to maintaining and increasing technical competence and to ensuring the sustainable development of nuclear technology.

The participants may choose to attend a one-, two- or three-week course. They will be divided into groups of three or four and each group will be accompanied by an expert during the entire training activity.

For up-to-date information about this seminar and training, visit their website at http://nrgspg.ing.unipi.it/3dsuncop/.

International Conference on Radiation Protection in Medicine "Setting the Scene for the Next Decade"

The International Conference on Radiation Protection in Medicine, "Setting the Scene for the Next Decade," which is organized by the International Atomic Energy Agency, will be held on December 3-7, 2012, in Bonn, Germany.

The conference will deal with aspects of radiation protection related to the use of ionizing radiation and radioactive substances in medicine.

The conference will have the following objectives, in particular:

- to indicate gaps in current approaches to radiation protection in medicine;
- to identify tools for improving radiation protection in medicine;
- to review advances, challenges and opportunities in the field of radiation protection in medicine, and to assess the impact of the International Action Plan for the Radiation Protection of Patients, in order to prepare new international recommendations, taking into account newer developments.

For up-to-date information about this conference, visit their website at http://www-pub.iaea.org/iaeameetings/41578/International-Conference-on-Radiation-Protection-in-Medicine-Setting-the-Scene-for-the-Next-Decade.

International Congress on Advances in Nuclear Power Plants

The 2013 International Congress on Advances in Nuclear Power Plants (ICAPP 2013) will be held on April 14-18, 2013, at the Lotte Hotel Jeju in Jeju Island, Korea. This congress will bring together international experts of the nuclear industry involved in the operation, development, building, regulation, and research related to nuclear power plants. The program will cover the full spectrum of nuclear power plant issues from design, deployment and construction of plants to research and development of future designs and advanced systems.

For up-to-date information about this conference, visit their website at http://www.icapp2013.org/.

2012-13 CALENDAR

September

Workshop on Computational Medical Physics, September 2, 2012, Nara Prefectural New Public Hall, Nara, Japan. The meeting agenda is available at http://www.icrs12.org/img/Workshop-CMP-announcement.pdf

ICRS-12 (12th International Conference on Radiation Shielding) and RPSD-2012 (17th Topical Meeting of the Radiation Protection and Shielding Division of the American Nuclear Society), September 2-7, 2012, Nara, Japan. Contact: ICRS-12 & RPSD-2012 Local Organizing Committee secretariat (office@icrs12.org) url http://www.icrs12.org/

9th International Conference on Facility Operations- Safeguards Interface (ICFO-SI9), September 23-28, 2012, Savannah, GA. For up-to-date information about this conference, visit their website at http://ICFO-9.org.

Third Workshop on Nuclear Data Evaluation for Reactor Application (WONDER), September 25-28, 2012, Aix-en-Provence, France. For up-to-date information about this workshop, visit their website at http://www.oecd-nea.org/science/meetings/wonder2012/

November

2012 ANS Winter Meeting and Nuclear Technology Expo, November 11-15, 2012, San Diego, CA, USA

Embedded Topical Meetings:

- Advances in Thermal Hydraulics (ATH'12)
- International Meeting on Severe Accident Assessment and Management: Lessons Learned from Fukushima Dai-ichi

For up-to-date information, visit their website at http://www.new.ans.org/meetings/c_1.

3D S.UN.COP Seminar – Seminar and Training on Scaling UNcertainty and 3D Coupled Code Calculations in Nuclear Technology, November 5-23, 2012, Dubrovnik, Croatia. For up-to-date information about this seminar, visit their website at http://nrgspg.ing.unipi.it/3dsuncop/.

December

International Conference on Radiation Protection in Medicine, "Setting the Scene for the Next Decade," December 3-7, 2012, Bonn, Germany. For up-to-date information about this conference, visit their website at http://www-pub.iaea.org/iaeameetings/41578/International-Conference-on-Radiation-Protection-in-Medicine-Setting-the-Scene-for-the-Next-Decade.

April

2013 International Congress on Advances in Nuclear Power Plants (ICAPP 2013), April 14-18, 2013, Jeju Island, Korea. For up-to-date information about this conference, visit their website at http://www.icapp2013.org/.