Radiation Safety Information Computational Center

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"The smallest good deed is better than the grandest good intention." -- Duguet

Printable PDF file of this newsletter available at: **http://www-rsicc.ornl.gov/NEWSLETTER.html**.

Nuclear Mathematical and Computational Sciences: A Century in Review, A Century Anew Successfully Concluded

The American Nuclear Society's 2003 Topical Meeting sponsored by the Mathematics and Computation Division, and co-sponsored by the Reactor Physics and Radiation Protection and Shielding Divisions, was held in Gatlinburg, Tennessee, April 6-10, 2003. The conference attracted 225 participants from 22 countries, including 35 students (who received complementary registration) from 6 countries. The conference proceedings were published on CD-ROM, additional copies of which can be ordered from ANS either through **accounting@ans.org**, or by contacting Ms. Sue Cook (708-579-8210 or **scook@ans.org**); ISBN: 0-89448-674-8; ANS Order Number: 700300; Price: $125.00.

The Technical Program for the conference revolved around the theme of its title, Nuclear Mathematical & Computational Sciences: A Century in Review, A Century Anew. The Anew component comprised 150 invited and contributed papers organized in 25 regular and special sessions on a broad variety of topics, plus a poster session and a panel session. The Review component of the conference, the Gelbard Review Lecture Series, was a marked departure from the standard Plenary Session format. It comprised seven invited lectures by world-renowned leaders in selected topics. The lecture series was dedicated to the memory of Ely Gelbard, who co-organized this series with Yousry Azmy and Enrico Sartori. An invited colleague of Dr. Gelbard briefly reminisced on his life and career then introduced one of the invited lecturers in the series. The lectures were videotaped and the video/audio stream will be published on CD embedded in the corresponding PowerPoint presentation. In selecting the slate of invited lecturers every attempt was made to include international colleagues. Regrettably, only one was willing and able to accept the invitation at the time it was extended, then apologized due to unforeseen circumstances.

Other notable events and distinguished speakers included the following:

Welcome address by Dr. Lee Riedinger, Deputy Laboratory Director for Science and Technology, Oak Ridge National Laboratory.

Welcome address by Dr. Larry Foulke, Vice President of the American Nuclear Society and consultant at Bettis Power Laboratory.

Luncheon in honor of Dr. I. K. Abu-Shumays, recently retired from Bettis Power Laboratory, with Dr. Foulke and Dr. Mike Natelson, both from Bettis Power Laboratory serving as MCs.

Dinner celebrating RSICC's 40th Birthday, with Hamilton Hunter serving as MC. The program included testimonials from various distinguished individuals in the field, most notably Betty Maskewitz, former director of RSICC, and Dr. Alvin Weinberg, Nobel Laureate, and former director of Oak Ridge National Laboratory.

Conference banquet with Bernadette Kirk serving as MC. The program included a memorial to Ely Gelbard by Dr. Mike Natelson and the announcement of M&C 2005 in Avignon, France, by Dr. Richard Sanchez. The banquet speaker was Joseph Salomon, Louvre Museum, Paris, France, who made an interesting presentation entitled "Ion Beam Analysis of Art Works: 14 Years of Use in the Louvre."

The first Gerald C. Pomraning Memorial Award was presented by Prof. Paul Turinsky, Chair of the M&C Honors & Awards Committee, posthumously to Prof. Gerry Pomraning. The award was presented during the conference banquet to Pomraning's widow, Mrs. Lucia Levermore.

A Best Student Paper competition was organized and the following awardees were recognized in the conference banquet: First Prize, $500: Jae H. Chang, Texas A&M University; Second Prize, $200: Allen Toreja, presently at Lawrence Livermore National Laboratory; Third Prize, $100: Doddy Kastanya, North Carolina State University. An RSICC Best Poster Award was organized and the winner was Thomas A. Brunner, Sandia National Laboratories.

RSICC Celebrates 40 Years

by Enrico Sartori

The dogwood is blooming, the redbuds are out, the Smokies are smoky. In this typical East Tennessee Spring RSICC celebrates 40 years. 40 is a remarkable age for an information center. There aren't that many having stayed young for so long. Our center located in France the NEA Data Bank is trying very hard reach that level of performance.

I have taken the trouble to look up what remarkable property 40 has. I first started with 39, because that's the age my organisation is reaching next month. What I found is that 39 is the smallest integer that seems not to have remarkable properties. Is that remarkable in itself? Concerning 40, that sounds to me more interesting: in fact the ring of integers of the cyclotonic set Q(40) is a factorial. This is really remarkable, but by no means as great as 40 years of extraordinary services as provided by RSICC.

Last week I have received a phone call from Switzerland, from one of our contacts, he wanted to meet me in Paris this week and when I informed him that I shall be in Eastern Tennessee, he said: "Oh Tennessee reminds me of a charming Lady I have met many years ago in East Berlin, when my country still was the German Democratic Republic, it was Betty Maskewitz, director of RSIC, do you know how she is doing? Bring her my best regards if you meet her".

Last week again, Jean-Claude Nimal, the former head of the French Radiation Shielding Laboratory, visited me and gave me a short text he asked me to transmit to RSIC and to Betty in particular. I read excerpts from it to you:

When it was created, I was just beginning my work in the French Atomic Energy Commission (CEA) in Fontenay aux Roses near Paris. I have learnt early from Jean Rastoin and Pierre Lafore that they thought the relations between RSIC and the French radiation shielding group of CEA were very important. Unlike other research fields, the radiation shielding information was very open to the international community thanks to the existence of centers like RSIC and NEA. In 1965, with Jean Rastoin, I got some detailed and interesting information about the SN code NIOBE and the Monte-Carlo codes SANE and SAGE. This information has been very useful to the French shielding community in Fontenay aux Roses and later in Saclay. After our first contact with Betty and Bob Roussin and in spite of my problems with my English, several relationships were established in the Monte-Carlo and radiation shielding studies: for instance the International Conference on Radiation Shielding (ICRS), meetings on the Monte-Carlo method

at Saclay and at Oak Ridge. Some code exchanges have occurred: O5R, TRIPOLI2 with the participation of Betty and Fred Maienschein. The TRIPOLI report has been translated from French to English by Ernest Silver. Staff exchanges were arranged: Jean Gonnord went to Oak Ridge and Noel Cramer came to Saclay.

I am confident that, in spite of the geographic distance, the good relationship in the radiation shielding area will last and I wish that the RSIC founder members and their successors will have a good anniversary. *Jean Claude Nimal*

Now, those of you, who received the last issue of the RSICC newsletter, may have read some of the messages sent to RSIC for their 40th birthday celebration. Apart from messages from US national users, you will have noticed, that a large part came from abroad.

This shows how important RSICC has been and is for the international community, and that their effort and services have been beneficial to a community worldwide.

I am dwelling from my recollections: it was Betty F. Maskewitz, who in those early times had invested a tremendous effort in serving a large community of scientists and engineers working in the area of radiation protection and shielding. The expertise and information provided through RSICC has marked generations of scientists and engineers in the USA. Betty quickly recognised the importance of sharing such information with the scientific-technical community worldwide- and through a generous move and personal investment she took initiatives to make this happen. First with the scientific laboratories and research centres in Western Europe. This effort was then extended to Japan. The next step concerned the countries behind what was then called the "Iron Curtain". She felt a need to melt the ice of that 'cold war', that prevented people with similar ambitions and living under different political regimes to share their competent knowledge and views. During her first visits there, she was received with open arms. These people had so much to tell her about their interesting work and achievements and were proud that, through her, it would be known beyond the confines of their borders. We know now that her visits had a tremendous impact in opening up a rather closed world, proven by the fact that many people still ask after her even though she retired a number of years ago. In many instances she was for them the first contact with America.

She visited also South Africa, when the situation there was quite different from today. Some looked at this with suspicion, but once more she was right, she anticipated the changes to come, building bridges across difficult borders.

Her action has not only consisted in talking to people and providing them with valuable information: she invited scientists to the USA. She assured that fellowships and grants are made available to the brightest, she invited them to give lectures, to present their work at international conferences, she provided to them contacts with peers in the US.

Betty established an RSIC atmosphere. Her method was based on building trust, and using generosity in other words on co-operation. Co-operation is obviously not a one way street, but your generosity when you have to give, leads to valuable and eventually to balanced returns. Her contacts have a special and personal touch. How many of her friends from overseas were invited to her "Shalom Vista"? For how many has she personally cooked the meals?

Betty realised the success of RSICC with the help of the outstanding staff she personally selected to assist her. Among these, her successor as director of RSIC: Bob Roussin, whose effort in developing data libraries for a comprehensive field of applications has had an incredible impact on improving the predictive capacity of the codes. Instead of agreements within orders of magnitude, agreements with experiments within percents were achieved. Bob has always approached problems with a smile and kindness, but also with strong determination during his directorship.

The successor of Bob Roussin, Bernadette Kirk, brought to RSICC a large expertise in computing. This was the other essential aspect of their activities. Through her competence and insight, the information system was redesigned, and brought in line with modern information technology. RSICC under her guidance has tackled the new challenges and overcome difficulties brought by changes in the nuclear business. She insisted that in order to maintain a high safety standard and to keep nuclear energy competitive, the best information must be available to the user community.

Hamilton Hunter, the present director of RSICC continues along the path set by his predecessors and is assuring that RSICC will continue its competent services for the future.

Particular appreciation needs to be expressed for the contribution all the other scientific, technical and support staff of RSICC have made to the success and who are present here today.

My orgaisation, the OECD/NEA Data Bank has been a partner of RSICC over almost the full 40 years of their existence. This co-operation, officially established through the DOE and the State Department has led to a strong impact of RSICC's competent service overseas and in particular produced strong ties of friendship that continue between the experts in the world and in America. With our organisation located in Europe, we could observe this very closely.

On this 40th birthday, the staff of the NEA Data Bank, and I am sure all users around the world, join with us, in wishing many happy returns to RSICC.

Enrico Sartori
Gatlinburg, April 8, 2003

M&C Topical Recognizes RSICC Longevity

The Radiation Safety Information Computational Center (RSICC) was brought into existence in the fall of 1962 in response to the Weinberg Report so it was fitting that Dr. Weinberg should appear at the 40th Anniversary Dinner celebrated on Tuesday, April 8, 2003, during the ANS Mathematics and Computation Division Topical Meeting held in Gatlinburg, Tennessee. RSICC has a synergistic relationship with the ANS and its M&C Division cemented by RSICC's participation on its committees and on the ANS-10 standards committee. Current RSICC Director, Hamilton T. Hunter, hosted the program, which opened with remarks by Dan Ingersoll on the role RSICC has played in the nuclear criticality field, followed by Enrico Sartori of the OECD NEA Data Bank, who commended RSICC for its dedication to extending scientific knowledge past national boundaries. Director Emerita, Betty F. Maskewitz, then took the audience through the early development of RSICC as an international resource for the study of radiation shielding, transport, and protection. Betty had the pleasure of introducing the featured speaker, Dr. Alvin Weinberg. His topic for the evening was "The Immortal Reactor," an exploration of the concept of building longevity into the design and construction of the next generation of nuclear power plants.

Left: RSICC 40th anniversary pictures at M&C 2003 Bernadette Kirk, I.K. Abu-Shumays, Betty Maskewitz, and Hamilton Hunter

Right: Front row: Yousry Azmy, Dick Hwang, Jack Dorning, Alvin Weinberg, Jerry Spanier. Back row: Ed Larsen, Enrico Sartori, Elliott Whitesides, Elmer Lewis, Kord Smith

Obituary

John C. Courtney, ANS Fellow and member since 1965, died November 9, 2002, at his home in Baton Rouge, Louisiana. Courtney received a doctorate in nuclear engineering from the Catholic University of America in 1965. While in the U.S. Air Force, he served as nuclear research officer at McClellan Central Laboratory from 1965-68. He taught graduate and undergraduate courses in radiation detection and shielding at California State University from 1966-71. He served as a physics specialist at Aerojet Nuclear Systems Corporation from 1968-71. From 1971 until his retirement in 1998, he taught nuclear science, nuclear engineering and health physics at LSU, and also served as a part-time radiation consultant. He

edited the *Handbook of Radiation Shielding Data*, published in 1975. He received the ANS Radiation Protection and Shielding Division Technical Achievement Award in 1983 and the ANS Meritorious Service medal in 1988. He was named an ANS fellow in 1994.

Source: *ANS News* March/April 2003

Betty Maskewitz adds that John (Jack) Courtney was a frequent visitor, along with his graduate students, to RSICC through the years - a long-term supporter and user of RSICC packaged products. We will miss him.

Available NRC Code

One U.S. Nuclear Regulatory Commission (NRC) software package transferred from the Energy Science and Technology Software Center, Oak Ridge, Tennessee, to RSICC was processed this month. Please browse the computer code abstract available at RSICC's web site for more information on this package.

PSR-198/SPIRT-NRC

Changes to the Computer Code and Data Collection

One new package and one newly frozen version were added to the computer code collection this month.

CCC-710/MCNP5

OP SYS: Windows; Unix; Linux; MAC OSX
Language: F90 and C
Computers: Workstations, Pentium; MAC
Format: Windows & Unix

Los Alamos National Laboratory, Los Alamos, New Mexico, contributed a new version of this general-purpose, Monte Carlo, N–Particle code system that can be used for neutron, photon, electron, or coupled neutron/photon/electron transport, including the capability to calculate eigenvalues for critical systems. The new MCNP5 code package includes MCNP5DATA cross section data libraries and the Visual Editor (VISED). The new Windows-based PC version of VISED can be used for interactively constructing & visualizing MCNP geometry.

Included are all the distributed neutron data libraries, the photoatomic libraries, photonuclear data library LA150U, electron libraries, an updated XSDIR file, MAKXSF, and a SPECS file for use with MAKXSF to convert the ascii data libraries into binary form. This release completely replaces previous RSICC releases DLC-105, DLC-181, DLC-189, and DLC-200 as well as the cross sections previously included with CCC-200/MCNP4A, and will be updated as new libraries become available.

The following data libraries for MCNP5 are included in this package:

Continuous-energy Neutron:	acti, endf66, la150n, uresa, endf6dn, endf62mt, endf60, newxs, rmccs, rmccsa, endf5p, endf5u, misc5xs, kidman, 100xs, endl92, endf5mt
Discrete Neutron:	newxsd, drmccs, dre5
Photoatomic Data:	mcplib, mcplib02, mcplib03, mcplib04
MCNP Multigroup Data:	mgxsnp
Photonuclear Data:	la150u
Thermal Neutron Data:	tmccs, therxs, sab2002

Electron Data: el, el03
Dosimetry Data: 531dos, 532dos, llldos

See developer web sites for more information:
MCNP5 code **http://www-xdiv.lanl.gov/x5/MCNP**
MCNP5DATA **http://www-xdiv.lanl.gov/PROJECTS/DATA/nuclear/avdoc.htm**
Visual Editor Consultants **http://www.mcnpvised.com/**

Additional information posted by MCNP developers to the MCNP Forum can be viewed on the web in the RSICC MCNP5 electronic notebook at:
MCNP5 - Part I
MCNP5 - Part II - The Team & the Computers
MCNP5 - Part III - New Features
MCNP5 - Part IV - MCNP5 - Part IV Verification
MCNP5 - Part V - Compiling & Plotting

New features in MCNP5 which were not available in the previous MCNP4C2 version are listed below.

* Doppler broadening for photon cross-sections
* Radiography tallies
* Generalized source options
* Time-dependent importances
* Extended period random number generator
* Superimposed mesh-based tallies
* Additional Macrobodies
* Edits of important criticality safety parameters
* Plotting enhancements
* Improved build system for compiling and testing
* Improved support for parallel operation using MPI and OpenMP

Requesters who received a prior version of MCNP from RSICC will be exempt from the transmittal fee for this release. To request the code and data package (C00710MNYCP00), complete an on-line request form on the RSICC website **http://www-rsicc.ornl.gov/order.html** and select MCNP5 package. In the comments field of the request form, please state your name and the installation at which you received the earlier version for verification.

At LANL MCNP5 was tested on SGI IRIX64, HP/Compaq Alpha, IBM RS/6000, and Sun workstations; on Pentiums running Linux and Windows (95, 98, ME, XP, 2000); on Apple G4 Mac OSX 10.2.4; and on Itanium Linux with Intel 7.1. Executables are included for Windows and Linux users, so users who want to run these executables do not require a compiler. Other computer users must have compilers. Compilation of MCNP5 requires both Fortran-90 and ANSI C standard compilers. Dynamic storage allocation is supported on all systems. Parallelism with both MPI and PVM is supported; however, the developers highly recommend using MPI because that is the basis for nearly all of parallel development and testing for MCNP5. For plotting geometry, cross-sections, or results, X11 must be installed on your PC. An X-windows server is required to display the X11 graphics. Suggested servers include ReflectionX, Exceed, and XFree86.

The package is distributed on two 80-min., 700MB CDs. One contains GNU compressed Unix tar files that can be read on Unix, Linux or MAC OSX. The other CD is for Windows users and installs the code and libraries in the same step-by-step automated fashion common to many Windows programs using InstallShield. Included are the referenced electronic documents, the source codes, Linux and PC executables, data libraries test problems, and installation scripts. References: LA-UR-03-1987 (May, 2003), LA-CP-03-0245 (May, 2003), LA-CP-03-0284 (May, 2003), informal report on VISED (2002). Fortran 90 and C; Unix systems, Windows PCs, Linux systems, Macintosh with MacOSX, Itanium (C00710MNYCP00).

PSR-351/PREPRO2002

OP SYS: Windows, Unix, Linux
Language: F77
Computers: Pentium, workstations, Power MAC
Format: Windows & Unix

International Atomic Energy Agency, Vienna, Austria, contributed a newly frozen version of the pre-processing code system for data in ENDF/B format. PREPRO 2002 is a modular set of computer codes, each of which reads evaluated nuclear data in the ENDF/B format, processes the data and outputs it in the ENDF/B format. Each code performs one or more independent operations on the data. The codes are named "the pre-processing" codes, because they are designed to pre-process ENDF/B data, for later, further processing for use in applications. These codes are designed to operate on virtually any type of computer with the included capability of optimization on any given computer. They can process datasets in any ENDF/B format, e.g. ENDF/B-IV, V or VI. Additional information is available on the PREPRO website: **http://www-nds.iaea.org/ndspub/endf/prepro/**. Each of the PREPRO2002 modules performs a different function on ENDF/B data files. A brief description of how the codes are used is listed below:

Linear - Linearize cross sections
Recent- Reconstruct cross sections from resonance parameters
Sigma1- Doppler broaden cross sections
Activate - generate activation cross sections (MF=10) from MF=3 and 9 data
Legend - Calculate/correct angular distributions
Sixpak - Convert double differential data to single differential
Fixup - Correct format and cross sections
Dictin - Create reaction dictionary (MF=1, MT=451)
Merger - Retrieve and/or Merge evaluated data
Groupie - Calculate group averages and multi-band parameters
Complot - Plot comparisons of cross sections (MF=3, 23), see Comhard for hardcopy
Evalplot - Plot evaluated data (MF=3, 4, 5, 23, 27), see also Evalhard for hardcopy
Mixer - Calculate mixtures of cross sections
Virgin - Calculated transmitted uncollided (virgin) flux and reactions
Convert - Convert codes for computer/precision/compiler
Relabel - Relabel and sequence programs

PREPRO2002 is written in standard Fortran. UNIX, Linux and OpenVMS systems require X11 for the graphics capability. For use on Pentiums running Windows or Linux and on PowerMAC, the distribution includes executables, ready to use immediately. All other systems require a Fortran compiler. PREPRO2002 was tested at RSICC on the following machines:

SUN UltraSparc 60 under SunOS 5.6 using f77 and C Version 5.0
Pentium running WindowsXP with included Compaq Visual Fortran executables
Pentinum running Redhat Linux with included Absoft executables
IBM RS/6000 running AIX Version 4.3.3 with XL Fortran Ver 7.1 XL C Ver 4.4
IBM 43P-260 running AIX 4.3.3 with XL Fortran 6.1 and XL C/C++ 4.4

The package is transmitted on a CD which contains the referenced document in electronic form and five machine-dependent compressed files. The extracted directories contain Fortran 77 source files, executables for PC and MAC, sample input and output, and information files. Reference: IAEA-NDS-39, Rev. 11 (February 5, 2003). Fortran 77 on IBM PC and PowerMAC, DEC Vax, Sun, IBM RS/6000 (P00351MNYCP03).

Monthly Code Focus

As years have gone by many different codes and applications have been sent to RSICC for stewardship. We currently have over 1700 analytical code and data packages and distribute as many each year to 73 countries in the world. To help 'categorize' each package, we have developed a database of 'Subject Categories' to attach applications to the packages at RSICC. Doing so requires investigation into each code package, user feedback from end use statements, and extensive RSICC staff experience and analysis so that we can deliver useful information each month on the 30 different categories we have identified thus far. Links to the package abstracts are embedded into the WWW version of the RSICC Newsletter. Feedback from our Newsletter community is very valuable so please direct your comments and/or suggestions to **PDC@ORNL.GOV**. Many packages in the RSICC code collection are in this subject category. A few are highlighted here for your review. This month's code focus is **Defense Nuclear Analysis.**

ARC	**ARMYLN**	**PCBATLE**	**SMAUG13**
ARMYLG	**COMIDA**	**RBD**	**TRGSGD**

CONFERENCES, COURSES, SYMPOSIA

RSICC 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 via email to **FINCHSY@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. Below is a condensed list of the **conferences** only. More details are listed following the table.

Condensed Table of Conferences

Name of Conference	Date and Location	Web Site	Abstract/Paper Submission Date
10th International Training Course/Workshop on "Methodologies for Particle Transport Simulation of Nuclear Systems"	June 23-27, 2003 Gainesville, Florida	**http://ufttg.nuceng.ufl.edu/workshop2003/workshop2003.html**	
2003 IEEE Nuclear and Space Radiation Effects Conference (NSREC)	July 21-23, 2003 Monterey, California	**http://www.nsrec.com/**	passed
21st International System Safety Conference	Aug. 4-8, 2003 Ottawa, Canada	**http://www.system-safety.org/**	passed
9th International Conf. on Environmental Remediation and Radioactive Waste Mgmt.	Sept. 21-25, 2003 Oxford, England	**http://www.icemconf.com**	passed

Name of Conference	Date and Location	Web Site	Abstract/Paper Submission Date
Supercomputing in Nuclear Applications (SNA-2003)	Sept. 22-24, 2003 Paris, France	**http://sna-2003.cea.fr/**	passed
Advances in Nuclear Fuel Management III	Oct. 5-8, 2003 Hilton Head Island, South Carolina	**http://rpd.ans.org/nfm.htm**	passed
6th International Symposium on ESR Dosimetry and Applications	Oct. 12-16, 2003 Campos do Jordão, Brazil	**http://www.if.usp.br/VI_ESR_2003/**	June 30, 2003
7th International Conference on Nuclear Criticality Safety (ICNC2003)	Oct. 20-24, 2003 Tokai-mura, Japan	**http://www.icnc.jp/**	passed
9th International Symposium on Radiation Physics (ISRP-9)	Oct. 27-31, 2003 Cape Town, South Africa	**www.medrad.tlabs.ac.za/isrp9.htm**	
11th International Conference on Fusion Reactor Materials (ICFRM-11)	Dec. 7-12, 2003 Kyoto, Japan	**icfrm.iae.kyoto-u.ac.jp**	passed
PHYSOR 2004	Apr. 25-29, 2004 Chicago, Illinois	**www.td.anl.gov/PHYSOR2004**	Sept. 5, 2003
Current Topics in Monte Carlo Treatment Planning	May 3-5, 2004 Montreal, Canada	**http://mctp.medphys.mcgill.ca**	Nov. 1, 2003
International Conference on Radiation Shielding (ICRS-10) and Topical Mtg. on Radiation Protection & Shielding (RPS 2004)	May 9-14, 2004 Funchal, Madeira Island (Portugal)	**http://www.itn.mces.pt/ICRS-RPS/**	

Advances in Nuclear Fuel Management III - Call For Papers

Preparations for the American Nuclear Society's Advances in Nuclear Fuel Management III Topical Meeting to be held in Hilton Head Island, South Carolina, during the period of **October 5-8, 2003**, have now begun in earnest. You are invited to serve on the Meeting's Technical Program Committee (TPC). In this capacity your commitment will include:

1. Electronically submit one or more papers, and encourage colleagues to do the same,
2. Help identify and organize special session(s) on timely topics you are interested in, and solicit participation, and
3. Electronically review papers assigned to you in a timely and professional manner

Please return the following information (name, affiliation, phone, alternative email if preferable, topics of interest) to Youssef A. Shatilla at **shatilya@westinghouse.com**.

The success of this meeting depends on your active support and involvement. Finally, please bookmark the conference web site: **http://rpd.ans.org/nfm.htm** and visit it occasionally for news and updates. Comments and suggestions are most welcome.

Current Topics in Monte Carlo Treatment Planning

This workshop will be held at McGill University, Montreal, Canada, from **May 3-5, 2004**, and aims to bring together medical physicists and researchers to discuss development, clinical implementation and clinical evaluation of Monte Carlo treatment planning techniques in radiotherapy. The meeting will have both invited speakers and proffered contributions and is designed to have plenty of opportunity for informal and in-depth discussions.

For details regarding registration, program, invited speakers, abstract submission, etc, please consult our workshop website: **http://mctp.medphys.mcgill.ca.** Early registration is encouraged as the number of participants will be limited to around 100.

2003 IEEE Nuclear and Space Radiation Effects Conference (NSREC)

The 2003 IEEE Nuclear and Space Radiation Effects Conference (NSREC) will be held in Monterey, California, **July 21-25, 2003**. This annual meeting of engineers and scientists presents the latest techniques for enhancing the performance of microelectronic devices and circuits that are used in radiation environments. The final call for papers for the 2003 IEEE Nuclear and Space Radiation Effects Conference (NSREC) is available on the web site at **www.nsrec.com**. Deadline for submission is February 7, 2003.

Make plans for the 2003 short course in Monterey. Joe Benedetto and his team of professors have put together an interesting program about radiation effects on device scaling. The syllabus is at **www.nsrec.com/short.htm**.

Forms to nominate an outstanding colleague for the 2003 Radiation Effects Award are at **www.nsrec.com/nominate.htm**. This award comes with a handsome IEEE plaque and $2000 check.

University professors - Forms are available on the NSREC web site to nominate an outstanding student for the 2003 IEEE NPSS Phelps Continuing Education Grant. The cash award ($500 - $1000) comes with an IEEE certificate and complimentary short course registration. NSREC plans to award two grants this year. See **www.nsrec.com/steering.htm**.

Keep checking the web site at **www.nsrec.com** for the latest NSREC information. Contact Paul Dodd, Sandia National Laboratories, 505-844-1447 if you have questions.

International Conference on Radiation Shielding (ICRS-10) and Topical Meeting on Radiation Protection & Shielding (RPS 2004)

The Tenth International Conference on Radiation Shielding (ICRS-10) and the Thirteenth Topical Meeting of the Radiation Protection and Shielding Division of the American Nuclear Society (RPS 2004) will be held **May 9-14, 2004**.

The Local Organization has been assigned to ITN (the Nuclear and Technological Institute, in Lisbon), a laboratory of the Portuguese Ministry of Science and Higher Education. At the international level, the joint organization is co-sponsored by the Nuclear Energy Agency (NEA) of the Organization for Economic Co-operation and Development (OECD), the Radiation Protection and Shielding Division (RPSD) of the American Nuclear Society (ANS), and the Radiation Safety Information Computational Center (RSICC, Oak Ridge National Laboratory).

It is anticipated that this will be the most important event in the areas of Radiation Shielding and Radiation Protection during 2004. For further information please refer to the Conferences' Web pages at the

following URL **http://www.itn.mces.pt/ICRS-RPS**. Please don´t hesitate to contact the Conference Secretariat at **icrs-rps@itn.mces.pt**.

In addition, if you would be interested in serving on the Scientific Program Committee, and contribute to the success of the meeting by either submitting or encouraging colleagues to submit papers, and participating in the technical review process, please contact the Conference Secratariat at the above email and provide your name, organization, email and topics of interest or expertise. The Organizing Committee welcomes your comments and suggestions to make your meeting a success.

6th International Symposium on ESR Dosimetry and Applications

The 6th International Symposium on ESR Dosimetry and Applications will be held **October 12-16, 2003**, in Campos do Jordão, Brazil. For complete information, please see **http://www.if.usp.br/VI_ESR_2003/** and click on "second announcement (PDF version)" on the left side of the screen.

7th International Conference on Nuclear Criticality Safety (ICNC2003)

The 7th International Conference on Nuclear Criticality Safety (ICNC2003) will be held **October 20-24, 2003,** in Tokai-mura, Japan. This conference has been held approximately every 4 years under the support of OECD/Nuclear Energy Agency/Nuclear Science Committee. The last conference, hosted by Japan, was the 3rd conference held in Tokyo in 1987. In the Versailles conference held in 1999, over 300 people from 25 countries participated, and more than 200 presentations were given on the recent activities in research work, industrial applications, regulatory studies, and other topics related to criticality safety. ICNC2003 will provide a good opportunity for communication among researchers, engineers, plant operators, and regulators. The Conference will consist of invited talks, contributed talks, and poster sessions. On the final day of the conference, technical tours to nuclear facilities are scheduled, and social programs are planned during conference. Please see the website for more information: **http://www.icnc.jp/**.

9th International Conference on Environmental Remediation and Radioactive Waste Management

The conference will be held in Oxford, England, **September 21-25, 2003**. Session M-6 - Applying Strategic Planning, Decision-making, and Risk Reduction Methodologies in EM, includes the following:

-- Applications of strategic planning, decision-making, and/or risk reduction methodologies and tools (e.g., roadmapping) to resolve environmental management issues
-- Innovative approaches to decision-making to resolve problems/issues related to environmental management
-- Innovative approaches to assessing risk and cost-effective reduction of risk for issues related to environmental management
-- Innovative approaches to strategically plan for and implement science and technology (S&T) to resolve environmental barriers to project completion
-- Ways to effectively integrate strategic planning, decision-making, and risk reduction techniques and tools to resolve environmental management issues
-- Methodologies used in developing the sites' plans to meet DOE EM's goals of site closures, cost savings, schedule acceleration, and risk reduction

Additional details on the ICEM conference are on the website at **http://www.icemconf.com**.

21st International System Safety Conference

The System Safety Society is pleased to announce the 21st International System Safety Conference, **August 4-8, 2003**, in Ottawa, Ontario, Canada. The conference is an international forum for the technical presentation and discussion of all aspects and issues regarding system safety engineering and

management. The conference theme is "Broader Perspectives, Focused Solutions." The emphasis is on the knowledge and skills necessary to create system safety solutions for increasingly complex technologies and missions. The range of topics will cover both the art and science of system safety and the organizational issues influencing the effective management of system safety in the product life cycle. This is the major conference for system safety and related professions, with a week of technical sessions, tutorials, workshops, special events, social affairs, luncheons, and the society's awards banquet. The conference proceedings are the premier collection of work in the system safety field. For more information, please visit: **http://www.russona.com/issc21/**.

9th International Symposium in Radiation Physics (ISRP-9)

The 9th International Symposium on Radiation Physics (ISRP-9) will be held in Cape Town, South Africa, **October 27-31, 2003**. This triennial event will be organized jointly by the International Radiation Physics Society (IRPS) and iThemba Laboratory for Accelerator Based Sciences (iThemba LABS) [formerly the National Accelerator Centre]. The Symposium is the latest in a series which began in Calcutta in 1974 and thereafter continued in Penang (1982), Ferrara (1985), São Paulo (1988), Dubrovnik (1991), Rabat (1994), Jaipur (1997) and Prague (2000). A 2½ day "Workshop on Radiation-Based Analytical Techniques" (WoRBAT) will be held prior to ISRP-9 (October 24-26, 2003) with emphasis on x-ray fluorescence and diffraction (XRF, XRD) and particle-induced x-ray emission (PIXE). For more information, please visit **www.medrad.tlabs.ac.za/isrp9.htm**.

MCNP Courses for 2003

Registration: **http://www-xdiv.lanl.gov/x5/MCNP/registration.html**
MCNP home page: http://www-xdiv.lanl.gov/x5/MCNP/index.html
LANL contact: **selcow@lanl.gov**
European contact: **sartori@nea.fr**
Japanese contact: **tadakazu@hero.tokai.jaeri.go.jp**

2003

June 10-13	Introductory class	Los Alamos National Laboratory
August date TBA	Advanced MCNP Topics	Los Alamos National Laboratory

The introductory class is for people who have little or no experience with MCNP. The intermediate to advanced class will be held for people who have used MCNP and want to extend their knowledge and understanding of the code system.

The classes will be based on MCNP5 and will cover the new capabilities of version 5. Attendees may elect to receive the new package. If you have previously received an older registered version of MCNP from RSICC, you may request that the MCNP5 package be sent to you at no charge. If you have not received an older version of MCNP from RSICC, you will be charged the applicable transmittal fee.

The other capabilities on MCNP will also be covered, including: basic and advanced geometry, source definitions, tallies, data, variance reduction, statistical analysis, criticality, plotting of geometry, and particle tracks, neutron/photon/electron physics.

All classes provide interactive computer instruction. Time will be available to discuss individual questions and problems with MCNP experts or to pursue in more detail topics mentioned in the talks. Please note that other classes are offered based on MCNP. The classes mentioned here are the only ones that are taught by the people who develop and write MCNP.

MCNP Visual Editor Classes

The Visual Editor is a powerful visualization tool that can be used to rapidly create complex Monte Carlo N Particle (MCNP 4C2) geometry models, including lattices, universes, fills, and other geometrical transformations. The Visual Editor can:

Display MCNP 4C2 geometries in multiple plot windows,
Create surfaces and cells to build a geometry,
Create materials using the local xsdir file,
Store commonly used materials in a material library,
Sub-divide large cells into smaller cells,
Create cells containing universes and lattices,
Interactively set cell importances from the plot window, and
Display source points and collision points in the plot window.

Two classes are scheduled **June 2-6, 2003**, and **September 8-12, 2003,** both in Richland, Washington. The class will focus on the use of the visual editor, with an overview of MCNP. The fifth day is optional and will focus on using the Visual Editor and MCNP to do some example problems.

Class will include computer demonstrations and exercises that will focus on creating and interrogating input files with the Visual Editor. Advanced visualization work using MCNP will also be demonstrated. The class will be taught on Pentium computers running the Linux operating system and Windows NT. Class attendees can use either the Linux or Windows version of the visual editor. Attendees are encouraged to bring their own input files for viewing and modifying in the visual editor. Further information on this class can be located at: **http://www.mcnpvised.com/train.html**, or by contacting Randy Schwarz (email **randyschwarz@mcnpvised.com**).

MCNPX Workshops for 2003

Lead Teachers: Drs. John Hendricks, Gregg McKinney, Laurie Waters
Organizer: HQC Professional Services Contact: **bill@solutionsbyhqc.com**
More Information: **http://mcnpxworkshops.com** MCNPX homepage: **http://mcnpx.lanl.gov**

2003

June 16-20	Introductory Med. Physics Emphasis	Houston, Texas
July 14-18	Intermediate	Los Alamos/Santa Fe
August 25-29	Advanced	Los Alamos/Santa Fe
October 6-10	Introductory	Stuttgart, Germany
November	Advanced	Japan

MCNPX is the LANL all-particle, all-energy (eV-TeV) Monte Carlo transport code based on MCNP4C, LAHET, CEM, etc. MCNPX has been in active development since 1995, sponsored by the particle accelerator community. It has now become an accepted tool for a broad range of applications by nuclear engineers, physicists, and scientists. The MCNPX development effort has expanded the use of the Los Alamos tools to applications such as APT, waste transmutation, accelerator shielding and health physics, particle beam cancer therapy, space shielding and cosmic ray analysis, single event effects in semiconductors, radiography, and more detailed analysis of the effects of light and heavy ions in matter. In addition, the entire functionality of MCNP4C is retained. New variance reduction and data analysis techniques, many adapted from high energy accelerator methodologies, have also been added, such as the extensive 'mesh tally' capability which allows up to 3-d plotting of particle tracks, fluence and

fluence-derived quantities, energy deposition, next event estimator generation contributions and particle sources.

The workshops include hands-on instruction, generally on PC Windows machines. Subject to participant export approval for the MCNPX beta test team, participants will be able to access the Fortran-90 version of MCNPX 2.4, the LA150 (150 MeV) cross-section data for over 40 isotopes for incident neutrons and protons, and 12 for photonuclear interactions, and a notebook of viewgraphs.
Follow-up consultation for class participants will be provided.

Classes are taught by experienced MCNPX code developers and instructors. More information on code versions and capabilities is available at MCNPX Workshops web site **http://mcnpxworkshops .com**.

Workshop on Nuclear Data for the Transmutation of Nuclear Waste

The "Workshop on Nuclear Data for the Transmutation of Nuclear Waste" will be held **September 1-5, 2003,** at GSI-Darmstadt, Germany. The workshop is organized on the occasion of the end of the HINDAS research program, a collaboration of several European Institutes working on the subject of "High and Intermediate Nuclear Data for Accelerator Driven Systems." Please note that the topics included in the workshop are not restricted to the HINDAS research program. All contributions to the subject of the workshop are more than welcome.

The workshop time-schedule will be organized in the following way: Monday will be dedicated to a closed HINDAS meeting. On Tuesday, the open sessions will start and last till the end of the workshop on Friday.

Those who are interested in participating in the workshop are invited to register (no fee) before August 1, 2003, using the workshop website **http://www-wnt.gsi.de/tramu.** There is also information on workshop topics, accommodations, transportation, and key dates. Please contact Aleksandra Kelic, **A.Kelic@gsi.de** if you have questions.

PHYSOR 2004

The Chicago Section of the American Nuclear Society is pleased to announce that it will host the PHYSOR-2004 Topical Meeting, **April 25-29, 2004,** in Chicago, IL. The meeting is co-sponsored by the Reactor Physics Division of the ANS and the OECD Nuclear Energy Agency. The conference will be held at the Hyatt Regency in downtown Chicago.

The title for the meeting is "The Physics of Fuel Cycles and Advanced Nuclear Systems: Global Developments." The technical program will cover more than 15 topical focus areas; the deadline for submission of 1000-word summaries is September 5, 2003. You are invited to visit the meeting website at **www.td.anl.gov/PHYSOR2004** to obtain updated information and to download a copy of the meeting announcement. Contact: Ray Klann, Technical Program Co-Chair, at 630-252-4305 or **klann@anl.gov**.

Short Courses on Monte Carlo Analysis and Nuclear Criticality Safety

The Department of Nuclear Engineering at the University of Tennessee-Knoxville is offering two short courses for radiation transport and criticality safety specialists during Tennessee Industries Week (TIW-38), **August 11-15, 2003**. One course is on the Monte Carlo method and the other course is on Nuclear Criticality Safety.

Monte Carlo is often the method of choice to solve complex problems in nuclear criticality safety and radiation shielding. To use Monte Carlo effectively, the analyst must understand the theoretical and computational fundamentals of the method, as well as the computational options available in particular computer tools. Also, it is sometimes advantageous to create new special-purpose Monte Carlo programs to solve particular problems rather than use an existing program. The Monte Carlo course runs for 5 days.

Engineers, scientists, and technical managers who wish to increase their knowledge and understanding of nuclear criticality safety will be interested in the criticality safety course, which also runs

for five days. The topics covered in the course are based primarily on the experience of the five instructors which totals over 120 years of nuclear criticality safety related experience. Such a wealth of experience needs to be shared with the criticality safety community including both new professionals in the field as well as experienced professionals.

For additional information on these two and other courses offered during TIW-38, contact Kristin England at the University of Tennessee, phone (865) 974-5048, email **kengland@utk.edu**, url **www.engr.utk.edu/nuclear/TIW.html**.

Supercomputing in Nuclear Applications

The conference on "Supercomputing in Nuclear Applications" SNA-2003, will be held in Paris, **September 22-24, 2003**. The web pages (**http://sna-2003.cea.fr/**) were expanded to include information on tours, sightseeing and events scheduled at the time of the conference.

One of the events at SNA-2003 is linked to the museum of "arts et metier", literally of arts & crafts; art is here used in its primary meaning: skills acquired through studies and by practice, technical knowledge. In this museum are displayed among many other items the "supercomputer" of 1642: arithmetical machine by Blaise Pascal, the original pendulum of Foucault (1851) or the instrument he developed to measure the speed of light (1852), or a decimal clock with a day of 10 hours each of 100 minutes and a minute of 100 seconds etc.

CALENDAR

June 2003

Visual Editor for MCNP, June 2-6, 2003, Richland, Washington. Contact: Randy Schwarz (email **randyschwarz@mcnpvised.com**, url **http://www.mcnpvised.com/train.html**).

MCNP Course, June 10-13, 2003, Los Alamos National Laboratory, Los Alamos, NM. Contact: Elizabeth Selcow (email **selcow@lanl.gov**, url **http://www-xdiv.lanl.gov/x5/MCNP/index.html**).

Practical MCNP For The HP, Medical Physicist, And Rad Engineer, June 16-20, 2003, Los Alamos, NM. Contact: David Seagraves (tel 505-667-4959, fax 505-665-7686, email **dseagraves@lanl.gov**, url **drambuie.lanl.gov/~esh4/mcnp.htm**).

MCNPX Advanced Workshop, June 16-20, 2003, Houston, TX. Contact: Bill Hamilton (tel 505-455-0312, email **registrar@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

10th International Training Course/Workshop on "Methodologies for Particle Transport Simulation of Nuclear Systems (Design, Dosimetry & Shielding), June 23-27, 2003, Gainesville, FLA. Contact: Daniel Shedlock (tel 352-392-1401 ext 332; fax 352-392-3380; email **shedlock@ufl.edu**, url **http://ufttg.nuceng.ufl.edu/workshop2003/workshop2003.html**).

July 2003

PENELOPE Training Course, July 7-10, 2003, OECD/NEA Headquarters, France. Please see **http://www.nea.fr/lists/penelope.html** for official announcement.

Intercomparison on the Usage of Computational Codes in Radiation Dosimetry, July 14-16, 2003, Bologna, Italy. Contact: Gianfranco Gualdrini (tel 39-051-6098350, fax 39-051-6098003, email **guald@bologna.enea.it**, url **http://www.nea.fr/download/quados/quados.html**).

MCNPX Intermediate Workshop, July 14-18, 2003, Los Alamos/Santa Fe, NM. Contact: Bill Hamilton (tel 505-455-0312, email **registrar@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

2003 IEEE Nuclear and Space Radiation Effects Conference (NSREC), July 21-25, 2003, Monterey, CA. Contact: Paul Dodd (tel 505-844-1447, url **http://www.nsrec.com**).

August 2003

21st International System Safety Conference, Aug. 4-8, 2003, Ottawa, Canada. Contact: Gerry Einarsson, Chair, (tel 613-824-2468, email **einargk@rogers.com**, url **http://www.russona.com/issc21/**).

Short Courses on Monte Carlo Analysis and Nuclear Criticality Safety, Aug. 11-15, 2003, Knoxville, TN. Contact: Kristin England (phone 865-974-5048, email: **kengland@utk.edu**, url **www.engr.utk.edu/nuclear/TIW.html**).

MCNPX Advanced Workshop, Aug. 25-29, 2003, Los Alamos /Sante Fe. Contact: Bill Hamilton (tel 505-455-0312, email **registrar@mcnpxworkshops.com,** url **http://mcnpxworkshops.com** for details).

MCNP Course, Aug. 2003, (TBA), Los Alamos National Laboratory, Los Alamos, NM. Contact: Elizabeth Selcow (email **selcow@lanl.gov**, url **http://www-xdiv.lanl.gov/x5/MCNP/ index.html**).

September 2003

Workshop on Nuclear Data for the Transmutation of Nuclear Waste, Sept. 1-5, 2003, GSI-Darmstadt, Germany, Contact: Aleksandra Kelic (tel 49-0-6159-71-2727, fax 49-0-6159-71-2785, email **A.Kelic@gsi.de**, url **http://www-wnt.gsi.de/tramu**).

Nuclear Energy for New Europe 2003, Sept. 8-11, 2003, Portorož, Slovenia, Contact: Tomaz Zagar (phone +386-1-588-5450, fax +386-1-561-2335, email **PORT2003@ijs.si,** url **http://www.drustvo -js.si/port2003/**).

Visual Editor for MCNP, Sept. 8-12, 2003, Richland, Washington. Contact: Randy Schwarz (email **randyschwarz@ mcnpvised.com**, url **http://www.mcnpvised.com/train.html**)

9th International Conference on Environmental Remediation and Radioactive Waste Management, Sept. 21-25, 2003, Oxford, England. Contact: (url **www.icemconf. com**).

International Conference on Supercomputing in Nuclear Applications, SNA 2003, Sept. 22-24, 2003, Paris, France. Organizers: CEA, SFANS, co-organizer: OECD/NEA. (email **SNA-2003@ cea.fr**, url **http://SNA-2003.cea.fr**).

October 2003

American Nuclear Society's Advances in Nuclear Fuel Management III Topical Meeting, Oct. 5-8, 2003, Hilton Head Island, SC. Contact: Youssef A. Shatilla (email **shatilya@westinghouse.com**, url **http://rpd.ans.org/nfm.htm**).

MCNPX Introductory Workshop, Oct. 6-10, 2003, Stuttgart, Germany. Contact: Bill Hamilton (tel 505-455-0312, email

registrar@mcnpxworkshops.com, url **http://mcnpxworkshops.com** for details).

7th International Conference on Nuclear Criticality Safety (ICNC2003), Oct. 20-24, 2003, Contact: Dr. Yoshinori Miyoshi (tel +81-29-282-6671; fax +81-29-282-6798, email **icnc03miyoshi@nucef.tokai. jaeri.go.jp**, url **http://www.icnc.jp/**).

9th Triennial International Symposium in Radiation Physics, Oct. 27-31, 2003, Cape Town, South Africa. Contact: Dr. D. T. L. Jones (tel +27-21-843-1336, fax +27-21-843-3382, email **Jones@tlabs.ac.za** url **www.medrad. tlabs.ac.za/isrp9.htm**).

November 2003

ANS/ENS International Winter Meeting and Nuclear Technology Expo, Nov. 16-20, 2003, New Orleans, LA. Contact: (url **http://www.ans.org/meetings/**).

MCNPX Advanced Workshop, Nov. (tbd), 2003, Japan. Contact: Bill Hamilton (tel 505-455-0312, email

registrar@mcnpxworkshops. com, url **http://mcnpxworkshops.com** for details).

December 2003

The 11th International Conference on Fusion Reactor Materials (ICFRM-11), Dec. 7-12, 2003, Kyoto, Japan. Contact ICFRM-11 secretariat (tel +81-774-38-3597, fax +81-774-38-3467, email **icfrm@iae.kyoto-u.ac.jp**, url **http://icfrm.iae.kyoto-u.ac.jp).**

January 2004

MCNPX Introductory Workshop, Jan.12-16, 2004, Las Vegas, NV. Contact: Bill Hamilton (tel 505-455-0312, Email **registrar@mcnpxworkshops.com**, url **http://mcnpxworkshops.com** for details).

April 2004

PHYSOR 2004 Reactor Physics Topical Meeting, Apr. 25-29, 2004, Chicago, IL. Jointly sponsored by the Reactor Physics Division of the ANS and the Nuclear Energy Agency of the OECD. **Contact:** Ray Klann (tel 630-252-4305, email **klann@anl.gov,** url **www.td.anl.gov/PHYSOR2004**).

May 2004

Current Topics in Monte Carlo Treatment Planning, May 3-5, 2004, McGill University, Montreal, Canada. Contacts: Jan Seutjens and Frank Verhaegen (tel 514-934-8052, url **http://mctp.medphys.mcgill.ca**).

International Conference on Radiation Shielding (ICRS-10) and Topical Mtg. on Radiation Protection & Shielding (RPS 2004), May 9-14, 2004, Funchal, Madeira Island (Portugal). Contact: Conference Secretariat (email **icrs-rps@itn.mces.pt,** url **http://www.itn.mces.pt/ICRS-RPS**).

ACCESSION OF NUCLEAR SYSTEMS LITERATURE

The nuclear systems literature (shielding, safety, materials) cited below has been reviewed and placed in the RSICC Information Storage and Retrieval Information System (SARIS), now searchable on the RSICC web server (**http://www-rsicc.ornl.gov/SARIS.html**). We now include medical physics in addition to material science, radiation dosimetry, radiation safety, reactor dynamics, reactor safeguards, risk assessment, waste management, fuel cycle, fusion and plasmas, high energy particle transport, and shielding. This early announcement is made as a service to the nuclear sciences community. Copies of the literature are not distributed by RSICC. 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. For literature listed as available from INIS contact INIS Clearinghouse, International Atomic Energy Agency, P.O. Box 100, A-1400 Vienna.

Ann. Nucl. Energy., 30, 897-909. . . *Derivation of Variance-to-Mean Formula for Periodic and Pulsed Neutron Source.* . . .Kitamura, Y. et al. . . . May 2003. . . Nagoya Univ., Aichi, Japan.

Ann. Nucl. Energy., 30, 911-930. . . *Validation of Axial Pin Power Distributions in a 10 x 10 BWR Assembly Across an Enrichment Boundary Under Full-Density Water Moderation Conditions.* . . .Jatuff, F. et al. . . . May 2003. . . Paul Scherrer Inst., Villigen, Switzerland; Elektrizitats Gesell Laufenburg, Dietikon, Switzerland; Westinghouse Atom Ab, Vasteras, Sweden; Swiss Fed. Inst. Technol., Lausanne, Switzerland.

Ann. Nucl. Energy., 30, 931-942. . . *Scope and Limitations of the Structural and Dynamic Analysis of a Thermal-Hydraulic Model.* . . .Espinosa-Paredes, G. et al. . . . May 2003. . . Univ. Autonoma Metropolitana Iztapalapa, Mexico City, Mexico.

Ann. Nucl. Energy., 30, 943-949. . . *The Effect of Random Geometry on the Criticality of a Multiplying System V: Influence of the Reflector.* . . .Williams, M.M.R.. . . May 2003. . . none listed.

Eng. Failure Analysis, 10, 255-263. . . *Characterization of Metallic Piercings.* . . .Azevedo, C.R.F. . . . June 2003. . . Inst. Pesquisas Technol. Estado, Sao Paulo, Brazil.

Eng. Failure Analysis, 10, 265-273. . . *Metallurgical Analysis of Cracking in Weldment of Propellant Tank.* . . .Jha, A.K. et al.. . . June 2003. . . Vikram Sarabhai Space Ctr., Kerala, India.

Eng. Failure Analysis, 10, 275-289. . . *Remaining Life Assessment of Service Exposed Reactor and Distillation Column Materials of a Petrochemical Plant.* . . .Sivaprasad, S. et al. . . . June 2003. . . Natl. Met. Lab., Bihar, India.

Eng. Failure Analysis, 10, 291-296. . . *Fatigue Failure of Helical Compression Spring in Coke Oven Batteries.* . . .Kumar, B.R. et al.. . . June 2003. . . Natl. Met. Lab., Bihar, India.

Eng. Failure Analysis, 10, 297-306. . .*Corrosion Fatigue Cracking of Tube Coils in an Actifier Column Catalytic Cracker.* . . .Shi, X. et al. . . . June 2003. . . Beijing Polytech. Univ., Beijing, PR China; Babcock & Wilcox Beijing Co., Beijing, PR China.

Eng. Failure Analysis, 10, 307-315. . . *Failure Analysis of MVR (Machinery Vapor Recompressor) Impeller Blade.*. . .Kim, T.G. et al .. . . June 2003. . . INJE Univ., Gyeongnam, South Korea; ROKAF, Deagu, South Korea.

Eng. Failure Analysis, 10, 317-323. . . *Failure Analysis of a Mast Column.* . . .Lee, J.H. et al.. . . June 2003. . . Korea Inst. Machinery & Mat., Changwon, South Korea; Kangnung Natl. Univ., Kangwon, South Korea.

Eng. Failure Analysis, 10, 325-328. . . *Surface Defects in Car Paint from Recombination of Atomic Hydrogen.* . . .Torkar, M. et al. . . . June 2003. . . Inst. Met. & Technol., Ljubljana, Slovenia.

Eng. Failure Analysis, 10, 329-339. . . *Corrosion Failures of AISI Type 304 Stainless Steel in a Fertilizer Plant.* . . .Shaikh, H. et al. . . . June 2003. . . Indira Gandhi Ctr. Atom. Resh., Tamil Nadu, India.

Eng. Failure Analysis, 10, 351-362. . . *Analysis of Failed Reformer Tubes.*. . .Ray, A.K. et al. . . . June 2003. . . CSIR, Natl. Met. Lab., Bihar, India.

Eng. Failure Analysis, 10, 363-370. . . *Investigation of Sub-Surface Cracks in Continuous Cast Billets.* . . .Das, G. et al. . . . June 2003. . . CSIR, Natl. Met. Lab., Bihar, India.

Eng. Failure Analysis, 10, 371-382. . . *Failure Analysis of an Accessory Bevel Gear Installed on a J69 Turbojet Engine.* . . .Park, M. . . . June 2003. . . ROKAF, Daegu, South Korea.

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Nucl. Technol., 142, 124-136. . . *Analysis of the Pressurized Water Reactor Main Steam Line*

Break Benchmark by the Coupled Code System ATHLET-QUABOX/CUBBOX. . . .Langenbuch, S. et al. . . . May 2003. . . Gesellschaft fur Anlagen-und Reaktorsicherheit, Garching, Germany.

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Nucl. Technol., 142, 166-179. . . *Analysis of the OECD Main Steam Line Break Benchmark Problem Using the Refined Core Thermal-Hydraulic Nodalization Feature of the MARS/MASTER Code.* . . .Joo, H.G. et al.. . . May 2003. . . KAERI, Daejeon, Korea.

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