



NCSD) be written to help the Division officers and committee chairs better learn and perform their roles. Dennis Tollefson (our immediate past-chair) used suggestions from another past-chair (Valerie Putnam) to draft some changes to our by-laws, but alas, reviewers (myself and other past-chairs) felt more work was needed before it should come to the Executive Committee for consideration. I hope to work with Dennis on this task in my retirement as Division chair.

I feel that one major shortcoming of our Division has been the lack of an Honors and Awards program that provides for a consistent recognition of professional achievements. I've asked Mike Westfall to head a committee that will consider the establishment of an annual award(s) that would be presented by the NCSD to a worthy candidate(s). This might be a "Young Engineer Award for Criticality Safety" or a "Lifetime Achievement Award". Please contact Mike or I if you have ideas or the interest and energy to help define

and establish the criteria and protocol for such an award.

**Challenges to the Society:** As noted above the Society is losing membership and is wrestling with identifying and implementing changes that will maintain ANS as a stable, viable professional society that speaks effectively for the nuclear industry. I have learned over the past few years that the "politics" of the society and the interactions of the divisions are complex to say the least. In March I participated in a Division Review and Reshaping Meeting where representatives from the Divisions, ANS Board and Standing Committees, and ANS staff discussed issues and concerns related to improving Division activities and Division relations. The hottest topic continues to be the need for two national meetings. I sent out a survey to the Division members with e-mail addresses (over 400 members) and got back about a 25% response rate. About 40% of the respondents favored maintaining two meetings a year. I

appreciate the time many of you spent in responding to the survey; it was very helpful to me during my participation in the March meeting. Please let me know if any of you would like a copy of the survey results - I plan to pass out copies at the Executive Committee meeting in Boston.

**Challenges to the Division:** Our Division has a strong and positive reputation among the ANS staff, ANS officers, and ANS national committees BECAUSE we generally support the society activities and initiatives. I have grown to greatly appreciate the participation and interest evident from the attendance at our Program Committee and Executive Committee meetings. For me it is an enjoyable learning experience to meet and discuss issues with others who have the common goal of assuring criticality safety yet provide differing views on how it should be assured. Unfortunately, my experience is that professional activities are increasingly being relegated to the back of the line because of increasing demands of the workplace. But the changes in our industry that absorb more and more of our work time will only be worsened if we neglect our professional obligations to maintain a common ground for communication and understanding within the activities of NCSD. Thus, I challenge each of you to stay involved, let your opinions be heard, keep an open mind to the opportunities to learn from each other, and be willing to work collectively to assure criticality safety principles.

My tenure as Division has gone by far quicker than I expected - I've achieved little of what I had hoped but I don't think I've made any real blunders either. I've treasured the opportunity I have had to represent the Division. I look forward to seeing many of you in Boston.

## Program Committee

Ron Marble

**The ANS Annual Meeting** is June 6-10, 1999, in Boston, MA. The NCSD sessions are: 1) Data and Analysis for Nuclear Criticality Safety; 2) The Place of Deterministic Codes in a Monte Carlo World; 3) DOE's Nuclear Criticality Safety Program DNFSB 97-2 – panel; and 4)

## Nuclear Criticality Safety Division (1998-1999)

### Officers

Chair: Cecil Parks (ORNL, 423-574-5280, [cvp@ornl.gov](mailto:cvp@ornl.gov))  
 Vice Chair: Doug Croucher (RFET, 303-966-2175, [douglas.croucher@rfets.gov](mailto:douglas.croucher@rfets.gov))  
 Secretary: Trent Primm (ORNL, 423-574-0566, [rtp@ornl.gov](mailto:rtp@ornl.gov))  
 Treasurer: Jack Bullington (WSMS, 502-744-9767, [jack.bullington@wsms.com](mailto:jack.bullington@wsms.com))

### Executive Committee and Committee Chairs

1999 Francis M. Alcorn, (BWXT, 804-522-5157, [fmalcorn@aol.com](mailto:fmalcorn@aol.com))  
 2001 Christa Boman, Publications, (BWXT, 804-522-5927, [christa.e.boman@mcdermott.com](mailto:christa.e.boman@mcdermott.com))  
 2000 Steve Bowman, Liaison to 2001 Topical, (ORNL, 423-574-5263, [st5@ornl.gov](mailto:st5@ornl.gov))  
 2001 Tom Doering, Membership, (702-295-4382, [Thomas.Doering@notes.ymp.gov](mailto:Thomas.Doering@notes.ymp.gov))  
 2000 Song Huang, Honors and Awards, (LLNL, 925-422-6516, [huang3@llnl.gov](mailto:huang3@llnl.gov))  
 2001 Kevin Kimball, (NISYS, [kimballkd@lmus.com](mailto:kimballkd@lmus.com))  
 2000 Richard Paternoster, Honors/Awards, (LANL, 505-667-4728, [rpatermoster@lanl.gov](mailto:rpatermoster@lanl.gov))  
 1999 Richard Taylor, Liaison to Public Information Committee (ORNL, 423-574-3529, [rqt@ornl.gov](mailto:rqt@ornl.gov))  
 1999 Peter Thorne, International Relations, (BNFL, 011-44-1925-833004, [prt@amqmps.com](mailto:prt@amqmps.com))  
 Ron Marble, Program Committee Chair, (ORNL, 423-574-6059, [marblerc@ornl.gov](mailto:marblerc@ornl.gov))  
 Jerry McKamy, Education, (301-903-8031, [jerry.mckamy@eh.doe.gov](mailto:jerry.mckamy@eh.doe.gov))  
 Thomas McLaughlin, ANS-8 Chair, (LANL, 505-667-4789, [tpm@lanl.gov](mailto:tpm@lanl.gov))  
 Dennis Tollefson, Bylaws, Division Representative, Nominating Committee Chair  
 John Schlessler, ANS-8 Secretary, (LANL, 505-665-2815, [johna@lanl.gov](mailto:johna@lanl.gov))  
 R. Michael Westfall, Fellow Award-Coordinator, (ORNL, 423-574-3530, [rwe@ornl.gov](mailto:rwe@ornl.gov))

Computer Model Visualization for Nuclear Criticality Safety Codes.

**The ANS Winter Meeting** is scheduled for November 14-18, 1999, in Long Beach, CA. The NCS sessions are below and paper submittals are due at ANS Headquarters by June 25, 1999. See [www.ans.org](http://www.ans.org) for a copy of the Call for Papers. Please contact Ron Marble, if the paper submittal will be delayed beyond that point.

**Data and Analysis for Nuclear Criticality Safety.** This session is the general session for NCS papers, which do not fit any other session topic. For more information contact Jim Baker, LLNL (505-665-2814).

**Training and Qualification Initiative in Nuclear Criticality Safety.** This session will include papers which describe recent initiatives in the area of training and qualification of Nuclear Criticality Safety (NCS) Engineers. Potential specific topics may include 1) the development of graduate level courses, 2) the development of more advanced week-long NCS workshops at UNM and LANL, 3) NCS web sites on training, 4) qualification programs currently under development for NCS engineers, and 5) the potential for a ANS Standard in this area. Session organizers: Wayne Andrews, DFNSB (703-680-9095) and Adolph Garcia, DOE (208-512-8359).

**Nuclear Criticality Safety Area of Applicability: Current Practice and New Approaches.** The purpose of this session is to provide a forum for the criticality safety community to exchange information on the establishment of area (or range) of applicability for validation of analysis methods and nuclear data. The session will provide an opportunity to review current practices and exchange information on new approaches under consideration. Session organizers: Keyes Neimer, Duke Engineering (704-524-4117) and Mark DeHart, ORNL (423-576-3468).

**Weapons - Nuclear Criticality Safety of Usable Fissile Material Deposits.** In conjunction with the Russian Federation (RF) and with the possible assistance of European and Asian nations, the U. S. Government is proceeding with plans to dispose of various weapons - usable materials including weapons - grade Pu (~95% fissile) highly enriched uranium, and  $^{235}\text{U}$ . Disposal methods include geologic disposal with either irradiated or unirradiated material; and long term, above-ground disposal. Papers are solicited which describe criticality safety data and analyses applicable to any "fuel cycle" operations including, but not limited to, conversion, blending with natural or process, and storage

of the final product as either unirradiated or irradiated material. Session organizers: Andrew Prichard (509-943-6660) and Trent Primm (423-574-0566).

**Criticality Accident Analysis Methods; Bringing the Gap between Benchmark Experiments and Reality.** This session will address the timely need for innovative criticality accident experiments, analysis, and SNM accountability. Historically, accident methodologies and evaluations have been benchmarked against well-defined data such as the CRAC experiments. Currently, there is a need to analyze accident scenarios which may be outside the boundaries of the current benchmarks. Such examples include, but are not limited to quasi-state transients or "slow cookers," accidents involving buried waste, and thorium fuel cycles such as  $^{235}\text{U}$ . Papers are sought which discuss new and innovative methods, application, and experiments which would add to current accident benchmark. Session organizers: Peter Angelo, LMES (423-241-4559) and Robert Kimpland, LANL (505-665-0488).

## News & Announcements

- Congratulations to Rene Sanchez, Robert Kimpland, Ken Butterfield, Peter Jaegers, and William Casson of Los Alamos National Laboratory who won the **NCS Best Paper Award** at the 1998 Washington ANS Meeting for their paper: "Critical Mass Experiment Using 235-U Foil-SiO<sub>2</sub>-Polyethylene Plates". Appreciation to Song Huang who formed an independent review group to review accepted papers and select the winner.
- The next **NCS topical meeting** will be an embedded topical meeting at the ANS June 2001 Meeting in Reno, Nevada. The theme of the meeting is "Implementing Criticality Safety in the New Millennium". General chair of the meeting is Steve Bowman from ORNL and the Technical Chair is Fitz Trumble from Westinghouse Safety Management Solutions.
- Yes, the **ICNC'99** meeting is still planned for September 19-24, 1999 in Versailles, France (just outside Paris). Keep checking the Web site at [www.ipsn.fr/icnc99/](http://www.ipsn.fr/icnc99/) for additional details or send an e-mail with questions to Cecil Parks.
- A new version of MCNP, called MCNP4XS, is available at the Radiation Safety Information Computational Center (RSICC). MCNP4XS contains unresolved resonance range probability table physics; enhanced perturbations; corrected coincident surfaces in lattices; and cumulative tallies. There is also a new cross section library, URES. Contact RSICC at [pd@ornl.gov](mailto:pd@ornl.gov).

## Training Courses

**July 13-15, 1999**  
**University of New Mexico**  
**Criticality Safety Assessments**  
**Workshop**

A three day workshop designed for criticality safety personnel with some experience doing assessments (evaluations) and some computer code experience (KENO, MCNP, MONK, DANTSYS). The participants will be divided into groups of three to four. Each group will be given an operation/process which is to be evaluated and for which limits and controls are to be determined. Each group will have a faculty observer/facilitator who will act as the "operations" representative. The group will be responsible for interviewing operations, identifying normal and off-normal conditions, parameters to be controlled, how the parameters will be controlled, limits, estimates of the k-effectives of different configurations, a summary of the assessment, and example postings and procedures. Each group will present their assessment to the faculty who will provide a critique of the results. The participants will have a chance to use handbooks, reports, manuals, and computer codes to evaluate the neutronics of the process and determine the sensitivity of k-effective to various parameters such as mass, concentration, reflection, etc. Enrollment for the workshop is limited to 16 attendees. The basic fee for the Assessments Workshop is \$1,000.00 which covers tuition, access to the computer codes, all other course materials and lunch each day. For information, or questions, contact Bob Busch at [busch@unm.edu](mailto:busch@unm.edu) or (505) 277-8027.

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## Training Courses cont.

**July 19-23, 1999**

**University of New Mexico**

**20<sup>th</sup> Annual NCS Short Course**

The purpose of the short course is to provide an overview of the theory and practice of nuclear criticality safety. The course content is directed toward the individual with less than two years experience of the field. However, one who is experience in a particular aspect of the field may find the overview to be of value. The basic fee for the Nuclear Criticality Safety Short Course is \$1,300.00. This fee covers tuition, Knief's textbook, all other course materials, and lunch each day. Enrollment for the short course is limited to 60 attendees (20 minimum). For information or questions, contact Bob Busch at [busch@unm.edu](mailto:busch@unm.edu) or (505) 277-8027.

**July 27-29, 1999**

**University of New Mexico**

**14<sup>th</sup> Workshop for Managers in Nuclear Criticality Safety**

The information presented at this workshop is designed for those people with oversight responsibility for criticality safety but not direct supervision of the criticality safety process. These may be managers who are in charge of all safety (fire, OSHA, crit, etc.) for a plant, or the plant manager. Anyone who needs to know what is involved in criticality safety and how it will affect their responsibilities should take this course. It is expected that they will leave the course with a better understanding of the criticality engineer's perspective of k-effective, validation, uncertainty, double contingency, rules, standards, and regulations. They will also understand the risks and the probability of a criticality accident; what is contained in a process analysis, and what is expected of management and supervisors in formulating and implementing a criticality safety program. The basic fee for the Managers Workshop is \$800.00. This fee covers tuition, Knief's textbook, all other course materials, lunch Tuesday and Wednesday. Enrollment for the workshop is limited to 20 attendees (10 minimum). For information, or questions, contact Bob Busch at [busch@unm.edu](mailto:busch@unm.edu) or (505) 277-8027.

**August 16-20, 1999**

**University of Tennessee, Knoxville**

**Nuclear Criticality Safety Short Course**

Our next NCS short course is scheduled for August 16-20, 1999 on the UT-Knoxville campus. The cost is \$1195 per person and includes a complete set of bound notes used in the course. Engineers, scientists, and technical managers who wish to increase their knowledge and understanding of nuclear criticality safety will be interested in this intensive one-week short course. The topics covered in the course are based primarily on the experience of the six instructors which totals over 130 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. The course topics include illustrative applications using the SCALE system developed at Oak Ridge National Laboratory with emphasis on the Monte Carlo code KENO Va, standards, regulations, review of accidents, hand calculation methods, subcritical limits, code validation techniques, emergency response, process upsets and recovery actions, and transient excursion modeling. A more detailed list of the topics is presented below in the course schedule. Additional information including registration information is posted on the Web site at [www.engr.utk.edu/nuclear](http://www.engr.utk.edu/nuclear) or contact Lee Dodds at [hld@utk.edu](mailto:hld@utk.edu) or (423) 974-2525.

**1999**

**SCALE Training**

The SCALE staff at ORNL will be offering several training courses in 1999. The courses emphasize hands-on experience solving practical problems on PCs. The ORNL courses will have workgroups of two persons each. No prior experience in the use of SCALE is required to attend these courses. The registration fee for each course at ORNL is \$1,500. A copy of the SCALE software and manual on CD may be obtained at the ORNL courses for an additional fee of \$250. Registrations will be accepted on a first-come basis. Registration forms submitted directly from the Web are preferred. Registration via FAX or e-mail is also acceptable. The registration fee must be paid by check or travelers checks. Check the SCALE Web site at [http://www.cad.ornl.gov/cad\\_nea/text/scale-home.html](http://www.cad.ornl.gov/cad_nea/text/scale-home.html).

**September 13-19, 1999**

**Versailles, France (prior to ICNC '99)**

**SCALE KENO-VI Criticality Course**

Contact Enrico Sartori  
(e-mail [sartori@nea.fr](mailto:sartori@nea.fr))

**October 25-29, 1999**

**Takai, Japan**

**SCALE Course (tentative)**

Contact Tadakazu Suzuki  
(e-mail [tadakazu@HERO.tokai.jaeri.go.jp](mailto:tadakazu@HERO.tokai.jaeri.go.jp))

**November 1-5, 1999**

**Oak Ridge National Lab**

**SCALE KENO-V.a Course**

Contact Kay Martin  
([x4s@ornl.gov](mailto:x4s@ornl.gov), 423-574-9213)