

American Nuclear Society

Nuclear Criticality Safety Division Newsletter



Spring 2008
<http://ncsd.ans.org>

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Message from the Chair

Welcome from NCSD. As my term as Chair winds down, I look back on another successful year for NCSD, and forward, as our momentum continues to grow. What more fitting a place for the ANS meeting than Disneyland - the place where dreams come true. The advent of the nuclear resurgence, the growth of the Society and the recognition finally coming due NCSD for some of the efforts put forth in the past show our dreams coming true as well.

Last year saw NCSD accelerate the growth of the Division from 750 in 2003 and 2004 to 793 in 2006, to 820 by December of 2007 to 840 by March of 2008. Our support of the Young Members Group and the student sections has paid off with NCSD attracting many of the younger members of the society. On the student side, NCSD has grown from 51 in March of 2004 to 100 in 2008 (a 100% increase in only 4 years) - more impressively we have grown from 63 in 2006 to 100 in 2008. Clearly we have something to offer and we're working to get the word out even further. Working with the membership chair, we are putting together a NCSD membership brochure that discusses benefits of membership - the plan will be to distribute the brochure to both current and future members and also to businesses. NCSD has been very successful in gaining corporate support for some of its endeavors, but that field can be expanded, thus providing even greater opportunities for NCSD to provide services for its members.

There is a full meeting planned for Anaheim, with Technical Sessions and Tutorials (see program update later in the news letter), our NCSD presentation to the ANS Board of Directors, Governance meetings (Education, Program and Executive) on Sunday, Standards meetings, etc. I invite you to take part in as much as you can. We will also be making a presentation at the request of the National Program Committee on "Why has NCSD been so successful". My greatest challenge will be remaining in the time they have provided - I'm very proud of the accomplishments of the Division and those are due to the support of so many of the members and Leadership team that's been put in place. Get involved yourself and help keep NCSD moving in the right direction (not to mention it can be a lot of fun).

At the close of the summer ANS meeting I'll be turning over NCSD to David Hayes and the other newly elected officers and Executive Committee members. It has truly been a pleasure representing each of you and I have the utmost confidence that NCSD is well positioned for success in the future. I know my fairy tale has come true and remember "when you wish upon a star....."

Fitz

Nuclear Criticality Safety Division Executive Committee

The people who run our division:

2007-2008 Officers (Term Ending June, 2008):

Chair

Fitz Trumble, (803) 502-9615
Washington Safety Management Solutions
Fitz.trumble@wsms.com

Treasurer/Finance Officer

Robert Frost, (423) 610-0249,
Nuclear Safety Associates,
robert.frost@nuclearassociates.com

Vice Chair/Chair Elect

David Hayes, (505) 667-4523,
Los Alamos Nuclear Security,
dkhayes@lanl.gov

Secretary

Brad Rearden, (865) 574-6085,
Oak Ridge National Lab,
reardenb@ornl.gov

Committee Members:

Term Ending June, 2008

Lawrence J. Berg, (301) 903-0125,
Department of Energy-EM,
larry.berg@em.doe.gov

Term Ending June, 2009

Sedat Goluoglu, (865) 574-5255,
Oak Ridge National Lab,
goluoglus@ornl.gov

Thomas D. Burns, Jr., (703) 863-5807,
Defense Nuclear Facility Safety Board,
tomb@dnfsb.com

John Miller, (505) 665-2815,
Los Alamos National Lab,
jamiller@lanl.gov

Charles D. Harmon, II, (505) 667-5940,
Los Alamos National Lab,
charmon@lanl.gov

Sandra Larson, (865) 574-3401,
Nuclear Safety Associates,
sandi.larson@nuclearassociates.com

Members (Term Ending June, 2010)

Donna D'Aquila (740) 897-4076
United States Enrichment Corporation
daquiladm@ports.usec.com

Darby Kimball (415) 768-5360
Bechtel National,
dskimball@gmail.com

Peter Angelo (865) 241-4559
Y-12 National Security Complex
angelopl@y12.doe.gov

Late News – Newly Elected Officers for 2008

Newly Elected Officers

Congratulations to the following newly elected officers, whose term begins at the end of the Executive Committee session at the June 2008 meeting

Chair :David K. Hayes

Executive Committee (Term Ending June 2011):

Vice Chair/Chair-Elect :Robert L. Frost

Julie G. Ezold: ezoldjg1@ornl.gov

Secretary :Bradley T. Rearden

David P. Heinrichs: heinrichs1@llnl.gov

Treasurer: Bonnie J. Rumble:
brumble@nisis.com

Larry L. Wetzel: lwetzel@bwxt.com

NCS D Website

The division website will be undergoing revision: <http://ncsd.ans.org/>.

Upcoming Meetings (at a glance)

Dates and locations of upcoming ANS meetings are listed below:

Dates	Location
June 8-12, 2008	Disneyland Resort, Anaheim, CA (ANS Annual Meeting)
Nov. 9-13, 2008	Grand Sierra Resort, Reno, NV (ANS Winter Meeting)
June 14-18, 2009	Atlanta, GA (ANS Annual Meeting)
Sept. 13- 17, 2009	2009 NCS D Topical Meeting Richland, Washington
Nov. 15-19, 2009	Washington, D.C. (ANS Winter Meeting)
June 13-17, 2010	San Diego, CA (ANS Annual Meeting)
Nov. 14-18, 2010	New Orleans, LA (ANS Winter Meeting)

ANS Meeting Program Details

Nichole Ellis, Program Chair

ellis_9899@msn.com

(803) 381-3710

June 8 - 12, 2008 (Anaheim, CA)

The **2008 ANS Annual Meeting** will be held June 8-12, 2008 at the Disneyland Hotel in Anaheim, CA. There will be a total of eight (8) sessions for the meeting. The sessions are shown below. Program information can be found at:

<http://www.ans.org/meetings/docs/2008/am2008-prelim.pdf>

- Data, Analysis, and Operations for Nuclear Criticality Safety – I, Monday, p.m.
- In Situ Nondestructive Analysis for Nuclear Criticality Safety – Tutorial/Paper, Tuesday
- ANSI/ANS Standard for Criticality Safety Engineer Training and Qualification–Panel, Wednesday, a.m.
- Data, Analysis, and Operations for Nuclear Criticality Safety – II, Wednesday, p.m.
- Advances in Fixed Neutron Absorber Applications, Wednesday, p.m.
- Nuclear Criticality Safety Standards – Forum, Thursday, a.m.
- Criticality Safety and Nuclear Packaging, Thursday, a.m.
- Data, Analysis, and Operations for Nuclear Criticality Safety – III, Thursday, p.m.

The following NCS-related committee meetings will also take place:

- NCS Education Committee – Sunday, 1:00-1:30 p.m.
- NCS Program Committee – Sunday, 1:30-2:30 p.m.
- NCS Executive Committee – Sunday, 2:30-4:00 p.m.
- ANS-8.1 Committee – Tuesday, 7:00-8:30 a.m.
- ANS-8.3 Committee – Sunday, 10:00-11:30 a.m.
- ANS-8.12 Committee – Tuesday, 4:00-6:00 p.m.
- ANS-8.20 Committee – Sunday, 9:00-12:00 a.m.
- ANS-8.21 Committee – Tuesday, 7:00-8:30 a.m.
- ANS-8.21 Committee – Thursday, 7:00-8:30 a.m.

ANS Annual Meeting and Call for Papers

Nichole Ellis, Program Chair

ellis_9899@msn.com

(803) 381-3710

November 9 - 13, 2008 (Reno, NV)

The **2008 ANS Winter Meeting** will be held November 9th – 13th at the Grand Sierra Hotel in Reno, NV.

The deadline for summary submission is June 13, and the Call for Papers for the meeting is available on the Internet at:

<http://www.ans.org/meetings/docs/2008/wm2008-cfp.pdf>

So far, the following seven (7) sessions have been proposed for the meeting (to be discussed at the Program Committee meeting in Anaheim). Summaries describing the sessions are shown below (if available).

1. Data, Analysis, and Operations for Nuclear Criticality Safety- Contributed

The purpose of this session is to provide a forum for timely presentation of general issues in the area of nuclear criticality safety that are not covered in other special session topics. **Session**

Organizer: Nichole Ellis, Ellis Nuclear Engineering LLC, (803) 381-3710, ellis_9899@msn.com.

2. Nuclear Criticality Safety Standards Forum – Panel

Subcommittee ANS-8, Operations with Fissile Material Outside Reactors, meets to discuss various technical and administrative aspects of the approximately 20 national consensus standards under its purview. In addition to status and progress updates by representatives of individual working groups, formal presentations on the technical bases of numerical values such as subcritical limits and experiences with applications of particular standards are solicited. Agenda topics such as new and expanded standards are also encouraged. **Session Organizer:** Tom McLaughlin, LANL-retired, (505) 667-7628, tpm@lanl.gov.

3. Nuclear Criticality Safety Standards Poster Session – Contributed

Subcommittee ANS-8, Operations with Fissile Material Outside Reactors, poster session. **Session Organizer:** Tom McLaughlin, LANL-retired, (505) 667-7628, tpm@lanl.gov.

4. Recent Nuclear Criticality Safety-Related Events and Associated Lessons Learned – Contributed

It is important for the nuclear criticality safety (NCS) community to share and learn from NCS-related events. Information from these events is primarily used to support plant safety. Because these events are shared within the NCS community, the causes of these events and their consequences will be better understood. In addition, the safety of operations involving fissile materials will be enhanced. Lessons learned can be implemented and institutionalized through changes to processes, procedures, equipment, and training programs. The purpose of this session is invite papers discussing recent NCS-related events and associated lessons learned. **Session Organizer:** TBD

5. Strengths, Weaknesses, Similarities, and Differences of Expert-Based and Compliance-Based Criticality Safety Programs- Contributed

In the past 10-years, NRC licensees and most DOE sites have been required by their regulators to adopt a criticality safety program based on rigorously documenting compliance with regulatory requirements. Criticality safety evaluations are required to detail accident scenarios and control strategies, proof of control flowdown is meticulously documented, training requirements are documented in detail and written records of the training are maintained, etc. This approach to criticality safety was implemented at least in part to the transition to a more transient workforce: with detailed documentation, it is easy for someone new to quickly understand the safety basis of an operation or indeed an entire facility. However, many people feel the requirement for detailed documentation detracts from the core safety role and prevents the criticality safety engineer from spending adequate time in the field. This session invites papers that discuss advantages or disadvantages of the two systems, comparisons of the two systems, and recommendations for future improvements. **Session Organizer:** Robert Frost, robert.frost@nuclearassociates.com

6. NCS D workshop on Criticality Accident Source Terms- Contributed

Session Organizers: Valerie Putman, Valerie.Putman@inl.gov; Sedat Goluoglus, goluoglus@ornl.gov

7. Validation Methods– Contributed

Session Organizer: TBD

ANS Awards Presentations- Washington DC Meeting

*Maria Letellier, Awards
yil@y12.doe.gov*

Two Division awards were presented at the Winter meeting in Washington, DC. The citations are shown below:

Dr. Robert Rothe was recognized with a TECHNICAL EXCELLENCE AWARD:

for pioneering work and outstanding leadership in the field of critical mass physics. Dr. Rothe was a principal scientist and experimenter at the Rocky Flats Critical Mass Laboratory from its inception in 1964 until its last critical experiment in 1987. Bob Rothe performed and documented over 1700 critical experiments involving plutonium and uranium in various forms and enrichments. Many of these experiments provide unique integral data essential for the validation of the criticality safety codes and methods that are in use today.

Dr. Mike Westfall was recognized with a DISTINGUISHED SERVICE AWARD

for distinguished service to the Division in developing and administering the NCS D special recognition awards program; in serving as the general chair of the 1993 NCS D topical meeting on Physics and Methods in Nuclear Criticality Safety; and through his services on ANS-8.15: Nuclear Criticality Safety of the Special Actinides, on the N16 consensus committee, and on the ANS Standards Board. This award also recognizes his general leadership in the development of international nuclear standards, in his membership on the OECD/NEA Working Party on Nuclear Criticality Safety, and in his leadership roles in the DOE Nuclear Criticality Safety Program. Additionally, the criticality safety community has benefited from his technical leadership roles in the early development of the SCALE System, the NCS strategy for TMI-2 recovery, and the initial studies on burnup credit. Mike Westfall's service to the Division and his overall commitment to this field stand as high examples of professionalism in nuclear criticality safety.

Nominations are being sought for both of these awards. Information on the awards is available on the NCS D website. Nominations and questions should be sent to Maria LeTellier.

In addition, a best paper award was presented to **Allan Krass**, for his paper entitled *Critical and Near-Critical Graphite-Moderated Arrays of U(93.2) Cylinders, Revisited*. The paper was presented by Doug Bowen at the June, 2007 ANS meeting in Boston, MA.

NCSD 2009 Topical Meeting Flyer



**Realism
Robustness
Renaissance**

NCSD 2009
Richland, Washington



Meeting Announcement

NCSD'2009 Organizing Committee

General
Chairman:
Michaela Brady Raap
michaela.bradyraap@pnl.gov
(509)375-3781

Honorary
Chairman:
Hans Toffler
Htoffer@aol.com

Technical
Program
Chairman:
David Erickson
David_G_Erickson@rl.gov

Finance
Chairman:
Scott Finfrock
Scott.Finfrock@fluoar.com

Publications
Chairman:
Ray Puigh
Raymond_Puigh@rl.gov

Technical
Tours:
Maynard Plahuta
myplahuta@clearwire.net

Corporate
Sponsorship:
Jennifer Tanner
jennifer.tanner@pnl.gov

Student
Coordinator:
Andrew Prichard
andrew.prichard@pnl.gov

DOE/RL
Liaison:
L. (Tom) Nirider
Laurren_T_Nirider@rl.gov

Topical Meeting of the ANS Nuclear Criticality Safety Division 2009:
Realism, Robustness and the Nuclear Renaissance
Shilo Inn, Richland, Washington USA
September 13-17, 2009

Realism and Criticality Safety:

- Input data
- Cross sections
- Modeling
- Accident scenarios

Applications and Realism:

- Benchmark selection
- Tsunami and other methods
- Sub-critical Measurements
- Burn-up credit applications

Robustness in controls:

- Development of Criticality Controls
- Requirements documents DOE, NRC
- Standards role
- Implementation of Criticality Controls
- Examples
- International experience

Ready for the Renaissance:

- Status and scope of GNEP
- Criticality safety needs for the fuel cycle (enrichment, fabrication, transportation, storage and disposal)
- Harvesting existing benchmark data (fuel cycle and nuclear data)
- In-situ measurements
- Criticality safety and engineering design
- Use of computers in operations controls
- People needs, training and education

Panel discussion "Are We Ready?"

Hanford Site Tours

Vitrification plant,
B reactor,
Waste Management
FFTF (Fast Flux Test Facility)

Workshop: Visual Editor for MCNP

With this innovation, users of MCNP have access to a powerful graphical user interface for efficient creation and interrogation of input files, which will significantly reduce the amount of time required to create and debug input files.

PRELIMINARY SCHEDULE for AUTHORS:

January 9, 2009	Electronic submission of abstracts
February 6, 2009	Notification to authors
April 6, 2009	Submission of full papers
June 12, 2009	Final notification to authors
July 10, 2009	Full papers due for publication (CD)
August 4, 2009	Early registration/Hotel reservations