

American Nuclear Society

Nuclear Criticality Safety Division Newsletter



Fall 2006
<http://ncsd.ans.org>

Inside This Issue

2	Message from the Chair
3	NCSD Executive Committee
4	Electronic Distribution of Newsletters
4	Thanks to Outgoing Officers/Members
4	Upcoming Meetings (at a Glance)
4	ANS Meeting Program Details
5	NCSD Awards Dinner (November 14, 2006)
8	ICNC 2007

Randy Shackelford, Editor
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Message from the Chair

First, I would like to thank Steve Bowman, our outgoing NCSD Chair, and the Officers and members of the Executive Committee whose terms expired this past June. Many of you don't realize that the Division is evaluated annually by many metrics. Their contributions (to the division) have made us one of the healthiest divisions in ANS!

Our "weak" area involved the establishment of a scholarship, which given the size of our Division, we were not expected to establish. However, under last year's leadership, the NCSD presented a unique scholarship concept that was approved by the ANS Board this past June. The scholarship committee put together the application for a graduate level scholarship honoring the NCS Pioneers; this scholarship is now open for applicants. Many thanks go to Julie Ezold for her work on coordinating action. Our next step is to evaluate the applications once they are received.

This is the first of many steps that we (as a Division) are taking to reach out to the younger generation. I am a firm believer that the best investment we can make is in the young engineers of our profession. To this end, you will see the Division take significant steps to involve new engineers. At the Division's business meetings (at the ANS Winter Meeting in Albuquerque), I will be challenging the Division and its leadership to meet the following goals:

- To nominate and elect members of the Young Generation to the Executive Committee;
- To establish new workshops and/or tutorials targeted toward new engineers for presentation at either the national or local ANS meetings; and
- To identify and implement new initiatives that will encourage publication of technical papers by student members at our Division's technical sessions.

Achieving these goals will require your direct participation by attending the NCS Division's business meeting (on Sunday of the conference), by communicating with your Executive Committee members, and by your encouraging the company you work for to help fund scholarships and to provide financial assistance to attend conferences.

The 2006 ANS Winter Meeting is loaded with many interesting topics and papers. Lane Paschal and the members of the Program Committee are doing a great job soliciting these papers. We have also received great financial support from many companies and individuals for the annual NCSD Awards Banquet. I expect to see many members of the Division this winter in Albuquerque!

Kevin Kimball
NCSD Chair

Nuclear Criticality Safety Division Executive Committee

The people who run our division:

2006-2007 Officers:

Chair

Kevin Kimball, (865) 293-2639,
NISYS Corporation,
kkimball@nisyscorp.com

Treasurer/Finance Officer

Robert Frost, (423) 610-0249,
Nuclear Safety Associates,
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Vice Chair/Chair Elect

Fitz Trumble, (803) 502-9615,
Washington Safety Management Solutions,
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Secretary

David Erickson, (509) 373-6500,
Fluor Government Group,
dg_erickson@blueheron.us

Other Members:

Term Ending June, 2007

Adolf Garcia, (208) 526-4420,
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garciaas@id.doe.gov

Term Ending June, 2008

Lawrence J. Berg, (301) 903-0125,
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Charles D. Harmon, II, (505) 667-5940,
Los Alamos National Lab,
charmon@lanl.gov

New Members (Term Ending June, 2009)

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

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

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

NCSD Website

Check out the Division's website at: <http://ncsd.ans.org/>
Click on the mail icon (at the website) to let our webmaster, Bob Smith know if you have any suggestions.

Electronic Distribution of NCS Newsletters

Randy Shackelford

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It was mentioned in the last newsletter that all future NCS newsletters would only be distributed electronically; electronic distribution of newsletters is free to the NCS. This will be the first newsletter to only be distributed electronically. You will note that the format of the newsletter has changed in order to facilitate electronic viewing (i.e., the column format has been discontinued). If you have comments or suggestions (regarding the newsletter) or if you would like to submit an article, please let me know.

Thanks to Outgoing Officers/Members

“Thank you” to the outgoing executive committee officers and members for a great job during your terms. The outgoing officers and members are as follows: Steve Bowman (Chair), Kevin Kimball (Vice Chair/Chair Elect), David Hayes (Treasurer/Financial Officer), Davis Reed (Secretary), Nigel “Jim” Gulliford (Committee Member), Dennis Mennerdahl (Committee Member), and Fitz Trumble (Committee Member).

Upcoming Meetings (at a glance)

Dates and locations of national ANS and International NCS meetings are listed below:

Nov 12-16 2006, Albuquerque, NM (Winter ANS Meeting),
<http://www.ans.org/meetings/winter/>

May 28-June 1, 2007, St. Petersburg, Russia (International Conference),
<http://www.icnc2007.com/>

June 24-28, 2007, Boston, MA (Annual ANS Meeting)

Nov 11-15, 2007, Washington, DC (Winter ANS Meeting)

ANS Meeting Program Details

Lane S. Paschal, Program Chair

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(270) 217-0548

November 13-17, 2006 (Albuquerque, NM)

The **2006 ANS Winter Meeting** will be held November 12-16, 2006 at the Hyatt Regency Convention Center in Albuquerque, New Mexico. There will be a total of five (5) sessions for the meeting. The sessions are shown below. Note that the Thursday afternoon session is a split session. Program information can be found at: <http://www.ans.org/meetings/winter/>

- Data, Analysis, and Operations for Nuclear Criticality Safety – I, Tuesday, p.m.
- Data, Analysis, and Operations for Nuclear Criticality Safety – II, Wednesday a.m.

- Use of Hand Calculations in Nuclear Criticality Safety Analyses, Wednesday p.m.
- Nuclear Criticality Safety Standards – Forum, Thursday a.m.
- Fire Protection and Nuclear Criticality Safety, Thursday p.m.
- Validation – How much is enough? Thursday p.m.
- DOE Nuclear Criticality Safety Program – Friday, 8:00 a.m.-2:30 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, 9:00 a.m.-12:00 p.m.
- ANS-8.20 Committee – Monday, 7:00-8:30 a.m.; Thursday, 7:00-8:30 a.m.
- ANS-8.21 Committee – Tuesday, 7:00-8:30 a.m.; Thursday, 7:00-8:30 p.m.
- ANS-8.23 Committee – Thursday, 1:00-5:00 p.m.
- ANS-8.26 Committee – Wednesday, 7:30-8:30 a.m.
- ANS-8.27 Committee – Monday, 8:30 a.m.-5:00 p.m.
- N16 Committee – Monday, 1:00-5:00 p.m.

NCSD Awards Dinner at ANS Winter Meeting (November 14, 2006)

Bonnie Rumble

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“Thank you” to Nancy and Jerry Hicks for making arrangements for the annual NCSD Awards Dinner at Seasons (located next to Old Town in Albuquerque). The dinner is planned for Tuesday, November 14, with a cash bar and cheese platter starting at 6:00 and dinner starting at 7:00. The menu will consist of the following:

Appetizers: Assorted Premier Cheese Platter

Salads: Caesar Salad and Matchstick green apple salad with champagne vinaigrette

Entrees: Seafood Brochette, Rotisserie Pork Loin and Roasted Vegetable Penne

Dessert: Seasonal Fruit Crisp and Triple Chocolate Brownie with vanilla ice cream

As of September 30, the following individuals and/or companies have agreed to sponsor the NCSD Awards Dinner. Based on the total sponsorship dollars received, half of the cost of the Dinner has been taken care of.

The sponsors include:

- * Nuclear Safety Associates *
- * NISYS Corporation *
- * Richard Taylor *
- * Lee Dodds (for HLD Associates) *
- * C. S. Engineering, Inc. *
- * Paschal Solutions, Inc. *
- * Nuclear Fuel Services, Inc. *
- * Larry Wetzel *

A special “thank you” goes out to these sponsors and others are encouraged to participate as NCSD sponsors.

June 24-28, 2007 (Boston, MA)

The **2007 ANS Summer Meeting** will be held June 24th – 28th at the Boston Marriot Copley in Boston, MA.

The deadline for summary submission is January 12, and the Call for Papers for the meeting is available on the Internet at:

<http://www.ans.org/meetings/docs/2007/am2007-cfp.pdf>

A total of six (6) sessions have been proposed for the meeting. Summaries describing the sessions are shown below.

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

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:** Robert Frost, Nuclear Safety Associates, (423) 610-0249, robert.frost@nuclearassociates.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. Implementation of 10 CFR 70, Subpart H, and 10 CFR 830, Subpart B – Contributed

This session will review regulatory and technical issues in NCS arising from implementation of 10 CFR 70, Subpart H, and 10 CFR 830, Subpart B, requirements. These issues would include: 1) establishing adequate subcritical margin/margin of safety; 2) demonstrating that performance requirements are met; 3) determining what controls to declare as items relied on for safety (IROFS)/determining what controls flow-up to the documented safety analysis and technical safety requirement documents; 4) identifying adequate IROFS substitution/identifying how NCS fits into the unreviewed safety question determination process; 5) identifying credible accident sequences/scenarios (both unmitigated and mitigated); and 6) characterizing NCS controls with respect to risk. **Session Organizers:** Harry Felsher, NRC, (301) 415-5521, hdf@nrc.gov, Brenda Hawks, DOE, (865) 576-2503, hawksbl@oro.doe.gov.

4. Practical Applications of NCS Control Parameter Implementation – Contributed

The purpose of this session is to provide real-world examples of technical solutions to operational implementation of subcritical limits on established controlled parameters. Facilities are encouraged to provide descriptions of unique, practical implementation of the double contingency principle to operating fissile material processes. A description of what controls are used, functionality, derivation of subcritical limits as they relate to operations, and management measures applied to established controls are possible focus areas. Fissile applications may include, but are not limited to, enrichment technology (GDPs, centrifuge, downblending); moderation control as applied to conversion or fuel fabrication; and concentration control on unfavorable geometry waste stream vessels, etc. Authors are also encouraged to factor in relevant lesson's learned and how historic controlled parameters have been modified as a result of historic process upset conditions, or as a result of integrated safety team reviews performed pursuant to current risk-informed regulations of 10CFR830 or 10CFR70. **Session Organizer:** Lon Paulson, Global Nuclear Fuels, (910) 675-5460, lon.paulson@gnf.com.

5. Regulator and Licensee Views on Criticality Safety Issues – Panel

Select two (2) professionals from any safety discipline and they are sure to agree on some topics in their area of expertise, while disagreeing on others. It therefore should not be surprising that in the field of nuclear criticality safety, which is one of the most highly regulated of all safety disciplines, regulators and licensees have differences of opinion regarding criticality safety issues. In recent years there have been significant new regulations introduced by both DOE and NRC, and these have in turn created new points of contention. This session will utilize a panel consisting of an equal number of members from licensees (the term is used loosely to include DOE Prime Contractors as well as NRC licensees) and regulators to consider and discuss pre-determined issues of interest. **Session Organizer:** Robert Frost, Nuclear Safety Associates, (423) 943-7427, robert.frost@nuclearassociates.com.

6. Student Research in Nuclear Criticality Safety

This session will feature contributed summaries highlighting recent graduate and undergraduate research in topics relevant to nuclear criticality safety. Acceptable summaries will describe research or projects conducted by students, and advisors are encouraged to co-author the summaries as a means mentoring the students in through the publication process. The scope and content of the summaries should be consistent with the students' current education and experience. **Session Organizers: Brad Rearden**, ORNL, (865) 574-6085, ReardenB@ornl.gov.

ICNC 2007 – St. Petersburg, Russia

Robert L. Frost

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The 8th International Conference on Nuclear Criticality Safety (ICNC) will be held May 28 through June 1, 2007, in St. Petersburg, Russian Federation. Visit the conference website for details: <http://www.icnc2007.com/>. This conference is sponsored by the OECD Nuclear Energy Agency, the Nuclear Society of Russia, and the American Nuclear Society. Please be aware that attending this conference requires significant pre-planning, including applying for the appropriate visa.

Refer to important dates below:

Key Dates for ICNC 2007	
Letter of Intention and abstracts submission	October 15, 2006
Notification of acceptance for authors sending	November 15, 2006
Manuscripts submission to the Secretariat	February 15, 2007
Registration fee payment for authors	March 15, 2007
Letter of Intention for participation in the Conference submission for participants who will not make presentation	March 31, 2007
Hotel reservation and payment	March 31, 2007
Visa support application form submission	March 31, 2007
Registration fee payment for all participants	April 30, 2007
Conference opening	May 28, 2007
Conference closing	June 1, 2007

