



Message From the Chair By Charles Martin

On June 19, 2006, NRG Energy, Inc. filed a letter of intent with the Nuclear Regulatory Commission to construct two new ABWR units at the existing South Texas Project nuclear facility. This is exciting news and comes on top of many other recent hopeful signs of a rebirth for nuclear power in the United States (see for example <http://www.nei.org/index.asp?catnum=2&catid=344>). However, we in NISD have a special responsibility both to the public and our industry: We must ensure that safety is held paramount for both continued operation of the existing plants as well as for design, construction and operation of the new generation of plants. Thomas Jefferson once said, "The price of freedom is eternal vigilance." It seems to me that because of human faults and the potential for deliberate acts, either with or without malice, this must be true for safety as well. My personal objectives for this year are to highlight the importance of a strong safety culture in all areas of the nuclear enterprise, to foster continued dialogue on the concept of defense-in-depth as we move toward increased reliance on risk informed regulation, and to seek to expand the use of root cause analysis in order to better understand the implications of unplanned events and thus seek early resolution of potential problems. In addition, I want to reach out to new nuclear engineers who are entering the work force in hopes of attracting them to the field of nuclear safety. Toward this latter end, Bob Henry of Fauske Associates is working to put together a workshop on nuclear safety to be presented at the ANS Annual Meeting in Boston, MA next June. The workshop will be titled "TMI-2 Accident - A Textbook in Severe Accident Management." The focus will be on severe accident management and is intended to provide important lessons for the understanding of severe accident progression in terms of the consequences of actions to be taken. Please encourage wide participation in this workshop, but particularly by your younger colleagues.

In addition to these initiatives, NISD is working to revise our bylaws and develop new rules of governance over the next several months. While this is perhaps a mundane task, it is important for the continued health of the Division. We made excellent progress as a division last year under the leadership of Joe Green and Linda Hansen: our membership increased by 1.3 per cent to 1659 members; we met or exceeded minimums for national meeting participation; our program committee is robust due to strong leadership by Herb Massie and Dana Powers and heroic efforts by the Special Session Chairman, Steve Schultz; our topical meetings have been successful thanks to careful planning and oversight by our Topical Meetings Coordinator, Kevin O'Kula; we made excellent progress on awards thanks to Jan van Erp and members of the Honors and Awards Committee; and, finally, this newsletter and our website are consistently excellent in quality and timeliness thanks to Gary Wilson. Please join me in extending heartfelt thanks for their tireless efforts.

I want to make one final pitch for the ANS Student Conference which will be hosted by the ANS student section at OSU. Our division is one of the sponsors for this conference. This year, the organizing committee is seeking to increase the number of professional participants, and I would encourage you to attend. Please consider using this as an opportunity to reach

out to the younger members of ANS to encourage them to join NISD and work with us in the field of nuclear safety. The official website for the conference is <http://groups.engr.oregonstate.edu/ans/>.

Message From the Vice-Chair By Allen Camp

I am very honored to have been elected as your Vice-Chair/Chair-Elect. I will continue to support the efforts of Charles Martin, Joe Green, and past chairs to reinvigorate our membership and preserve and strengthen our safety knowledge base. It is clear that we are entering a new and expanded era of nuclear energy, and our role as nuclear safety professionals is extremely important. Lapses in safety or security at nuclear installations, in addition to putting public health and safety at risk, can derail the exciting new initiatives in nuclear energy that are happening worldwide.

What is the role of the nuclear safety professional in the 21st century? Following the 1979 accident at Three Mile Island Unit 2, a Presidential Commission stated: "*Nuclear power is by its very nature potentially dangerous, and ... one must continually question whether the safeguards already in place are sufficient to prevent major accidents*". So it would seem that one of our roles is to continually question. Unfortunately, in the past such questioning could be unbounded and effectively block progress. Nuclear installations of all types could be "what if'd" without end, driving up costs and leading to cancellations. The good news is that we are slowly moving past those problems with combinations of risk-informed, performance-based, and standards-driven practices that provide a framework for much more reasonable decision making.

Improvements in probabilistic risk assessment (PRA) methods and data, as well as a realization that safe plants are usually reliable and profitable plants, have enabled much of the progress that we have made. But what do these changes mean to the safety professionals? We now have PRA methods and standards, so we can simply implement the methods and the checklists and have safe plants, right? This is the complacency trap that we must avoid. The real role of the safety professional is to think, and PRA methods and standards give us a framework within which to think. "What if" questions can be asked and disposed of readily in an engineering context; the important thing is to not stop questioning. The true safety professional must also understand the limitations of the methods and models. We do not have safety because a model says so or because someone asserts that negative outcomes are unrealistic. We have safety because people like you work hard to make sure that important issues are surfaced and addressed with sound engineering and thoughtfulness.

What can you do to help move us forward? Opportunities abound to get involved with ANS, including the NISD. You can also be active in standards organizations, support university programs in nuclear safety, and encourage nuclear safety training. Safety professionals need to assume a role of leadership in the nuclear community and insist on the highest standards of excellence that the public and our profession deserve.



Invitation to nominate Candidates for the Tommy Thompson and the George C. Laurence Awards

By Jan Van Erp

The Tommy Thompson Award for Nuclear Safety is presented annually to persons who have made outstanding contributions to the enhancement of nuclear installations safety. The award is named in honor of Professor Theos J. (Tommy) Thompson of MIT, who made outstanding contributions to nuclear reactor safety, including being the principal author of a pioneering textbook on the subject.

The George C. Laurence Award for Pioneering Contributions to Nuclear Safety is presented in honor of Dr. George C. Laurence who was one of the pioneers in the Canadian nuclear program and who showed remarkable insight by early introducing the risk-informed concept and establishing it, in his capacity of President of the Atomic Energy Control Board, as an integral part of the Canadian nuclear safety regulatory system. The George C. Laurence Award is given occasionally based on the availability of qualified candidates.

ANS members are invited to nominate candidates for the above-mentioned awards. To be considered for 2007 awards, nominations should be received prior to December 1, 2006 and should be accompanied by a brief description of each candidate's accomplishments. Candidates are not required to be members of ANS, nor are they required to be residents or citizens of the USA.

The selection process will be carried out in a two-step procedure, namely:

- (1) a preliminary screening based on the brief description of the candidate's accomplishments submitted by the nominator;
- (2) a more in-depth selection from those candidates who passed the initial screening. This latter process requires submission of a number of letters of recommendation stating the reasons why the candidate is qualified for the award.

Please send nominations to: <vanerp@AOL.com>

Program Committee

By Dana Powers
The Nuclear Installations Safety Division continues to get outstanding participation in the meeting programs both with respect to the number of papers and the quality of papers. At the 2006 Winter meeting, the Division will sponsor or cosponsor the following 10 sessions involving 35 papers:

- Emergency Preparedness and Response
- Enhancing Safeguards at U.S. Nuclear Sites Through IAEA Additional Protocol
- Transitioning to Performance-based Fire Protection (NFPA 805)
- Severe Accident Phenomena and Engineered Features
- Generic Safety Issue 191: Pressurized Water Reactor Containment Sump Performance and Analysis
- Probabilistic Risk Assessment
- Fire Protection and Nuclear Criticality Safety
- Software Safety for Digital Electronics in Nuclear Safety Systems
- Reactor Safety: General
- Emerging Topics in Nuclear Installation Safety Technology

All the sessions are expected to be quite useful. Members of the Nuclear Installation Safety Division are encouraged to attend as many of these sessions as they can – there is at least one NISD-sponsored session every day of the Winter Meeting. Attention is called especially to the panel session organized by Linda Hansen, “Enhancing Safeguards at U.S. Nuclear Sites Through IAEA Additional Protocol”. Linda has assembled an impressive panel of authorities with diverse responsibilities. The session promises to be an excellent opportunity to understand what is happening today in the important area of safeguards. The decision by the Nuclear Installation Safety Division to offer regular sessions on fire safety is proving to be popular. The session on transitioning to performance-based fire protection and the new fire protection standard from the National Fire Protection Association (NFPA 805) should also be a useful session to attend. The session on containment sump blockage in pressurized water reactors (Generic Safety Issue 191) affords an opportunity to see the latest in this crucial issue for operating reactors. Finally, the session “Emergency Preparedness and Response” is an opportunity to see the culmination of a great deal of recent work looking at emergency response plans for nuclear facilities.

It is not too early to begin thinking about papers for the Annual June meeting in 2007. Papers will be due in January. The Nuclear Installation Safety Division is offering special sessions on:

- Regulation of Safety Culture
 - Updating the NRC's Safety Review Plan
 - Gas Reactor Safety and Licensing
 - Control Room Habitability: Technical and Regulatory Lessons Learned
 - New Regulatory Approaches for Pressurized Thermal Shock Analysis and Licensing
 - Changes to 10 CFR Part 52
 - Modeling Safety issues of Fuel Reprocessing
 - Validation of Safety-related Phenomenological Models
 - Fire Protection in Nuclear Installation Safety
- The Division will continue to offer sessions of general interest:
- Probabilistic Risk Assessment
 - Reactor Safety: General
 - Nuclear Installations Safety: General
 - Emerging Topics in Nuclear Installation Safety Technology

Scheduled NISD Meetings

All NISD members are welcome to attend the following NISD committee meetings at the November 2006 Meeting in Albuquerque:

- Executive Committee: Monday November 13, 5:00pm-8:00pm
Aztec (Convention Center)
- Program Committee: Sunday November 12, 7:30pm-11:00pm
Picuris (Convention Center)

The Executive and Program Committees invite NISD members to express their interest in serving on those committees, particularly by participation in one or both of the indicated meetings.

Members may also wish to attend the Honors & Award Luncheon on Tuesday November 14, 11:30am-1:00pm in Ballroom C (Upper Level, Convention Center). Tickets can be



purchased in advance or on-site at the ANS Registration Desk for \$40.

Invitation to contribute to NISD Memorial Scholarships

The NISD has been instrumental in developing two Memorial Scholarships, namely:

Saul Levine Memorial Scholarship to be used to support the graduate education of worthy nuclear engineering students. Award of this scholarship is pending further donations with the desire to become fully endowed within the next four years.

Ray DiSalvo Memorial Scholarship to be used to support the undergraduate education of worthy nuclear engineering students. This scholarship has been awarded in both 2004 and 2005, but needs additional funding to become fully endowed.

ANS members are urged to contribute to these worthy scholarships. Any size of contribution is most welcome (\$10, \$15, \$25, \$50, \$100; \$250; \$500; \$1000). Contributions of \$100 or more will receive a letter of acknowledgment.

Tax-deductible donations to these funds may be made by personal check (made out to American Nuclear Society) or by credit card (see below). Please, mark on the check: "for the Saul Levine (or Ray DiSalvo) Memorial Scholarship Fund". Send to:

American Nuclear Society
Attention: Sharon Kerrick
555 North Kensington Avenue
LaGrange Park, IL 60526 USA

If paying by credit card, please complete, cut and send the following:

For: (*Saul Levine Memorial Scholarship, or Ray DiSalvo Memorial Scholarship*)

Type Card: (*Visa; Master Card; AmEX; Other*)

Card number:

Expiration date:

Amount:

Signature:

Embedded ANS Topical Meeting on Safety & Technology of Nuclear Hydrogen Production, Control, & Management (ST-NH2)

The next NISD topical meeting is scheduled for June 24 – 28, 2007 in Boston, and will focus on the safety and technology of the production, control and management of hydrogen in nuclear systems. The General Chair for ST-NH2 is Carl Sink, Program Manager, U.S. DOE Nuclear Hydrogen Initiative, and the Honorary Chair is Paul Kruger, Stanford University, a pioneer in the nuclear hydrogen production field and energy systems.

The ST-NH2 Topical, using ANS's embedded format, is sponsored by the Nuclear Installation Safety Division (NISD) with Fuel Cycle and Waste Management (FCWMD), Thermal/Hydraulics (THD) and Environmental Sciences (ESD) Divisions as co-sponsoring divisions. The meeting will provide unique opportunities to report on research & development, safety, program planning, and regulatory professionals for discussing progress, status, experience, and near-term goals in hydrogen

production, control and management based on nuclear systems. Programs, accomplishments, and challenges will be highlighted in both the international and domestic areas.

At this time, NISD is seeking stimulated papers in topical areas of interest to the meeting with abstracts due by January 5, 2007, with full papers due by March 15, 2007. All papers will be peer-reviewed and a Proceedings CD will contain the full content of submitted and accepted papers.

Authors are **REQUIRED** to use the ANS Template and "Guidelines" for Summary and Full Paper submissions provided at

- <http://www.ans.org/pubs/transactions/>
 - <http://www.ans.org/pubs/proceedings/>
- respectively.

Topics of Interest for Stimulated Papers:

1. Nuclear Production Technology Programs: Status and Progress
 - U. S. Program
 - Pacific Rim Programs
 - European Programs
 - Research Reactor Programs
2. Nuclear Technology Development: Status and Progress
 - High-Temperature Electrolysis
 - Thermochemical Cycles
 - Hybrid Cycles
 - Steam Reforming
 - Fusion-Based and Advanced System Production
 - Integrated and Co-Generation Systems
 - Balance-of-Plant
3. Safety Aspects of Nuclear Production of Hydrogen
 - Reactor Safety Issues
 - Ex-reactor and balance of plant
 - Transport and Infrastructure
4. Systems and Risk Studies
 - Nuclear Production of Hydrogen
 - Control and Management of Hydrogen
5. Environmental Aspects of Nuclear-Based Hydrogen Production
6. Socioeconomic Perspectives
7. Computer Code Development for Safety and Process Optimization
 - Analytical Software Development
 - Process Control and Programmable Logic Software
 - Experience with New Generation Software
 - Software Quality Assurance
8. Hydrogen Control in Nuclear Power Plants
 - Operating experience
 - Mitigation and prevention
9. Materials Issues - Applied Research and Development
 - Production
 - Storage
 - Operating Plants
 - Test Design, Protocol, and Quality Assurance
10. Waste Processing and Storage Safety
 - Hydrogen Control in Waste Processing Facilities
 - TRU Waste Drum Management
 - Worker Safety Issues



11. Regulatory Perspectives and Safety Culture

- Risk-Informing Paradigms
- Chemical Industry Lessons Learned
- IAEA, DOE, OSHA, EPA, and Perspectives.

**Probabilistic Safety Assessment 2008
(PSA '08)**

In mid-2006, the NISD Program Committee solicited by email letter, local sections for proposals to host the next topical meeting on Probabilistic Safety Assessment (PSA) in 2008. The host section will be selected in the October timeframe by a committee consisting of Bonnie Shapiro, Allen Camp, Linda Hansen, and Kevin O’Kula. Preliminary approval for the topical is planned at Screening and International Committee meeting during the ANS Winter Meeting in November.

Past PSA Topicals include:

- 1978 Newport Beach, CA
- 1981 Port Chester, NY
- 1985 San Francisco, CA
- 1989 Pittsburgh, PA
- 1993 Clearwater Beach, FL
- 1996 Park City, UT
- 1999 Washington, D.C.
- 2002 Detroit, MI
- 2005 San Francisco, CA.

NISD Website

The NISD Website may be accessed directly at <http://nisd.ans.org> or indirectly at <http://www.ans.org>.

NISD Officers and Committees 2006-2007

Charles Martin **Chair**
202-694-7132
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004-2901
202-208-6518 FAX
Email: charlesm@dnfsb.gov

Allen Camp **Vice-Chair/Chair-Elect**
505-844-5960
13621 Indian School Road NE
Albuquerque, NM 87112
505-844-2193 FAX
Email: alcamp@sandia.gov

Linda Hansen **Secretary/Treasurer**
630-863-5895
9700 South Cass Avenue, Bldg 315
Argonne, IL 60439-4814
208-234-8070 FAX
Email: hansen@anl.gov

Executive Committee:

Catherine Gaujacq
Joseph Green
Kevin O’Kula
Charles Martin
Allen Camp
Linda Hansen
Robert Henry
Andrew Kadak
John Kelly
Gerald Loignon
Dana Powers
Harmut Wider

edfinacg@aol.com
joseph.green@shawgrp.com
kevin.okula@wsms.com
charlesm@dnfsb.gov
alcamp@sandia.gov
hansen@anl.gov
henry@fauske.com
kadak@mit.edu
jekelly@sandia.gov
gloignon@scana.com
dapower@sandia.gov
hartmut.wider@jtc.nl

Program Committee:

Dana Powers **Chair**
505 845-9838
Ray Gallucci **Vice-Chair**
301-415-1255
Larry Zull **Secretary**
202-694-7154
Email: dapower@sandia.gov
Email: rhg@nrc.gov
Email: larryz@dnfsb.gov

Tony Barratta
Robert Bari
Robert J. Budnitz
David Diamond
Joseph Green
William Hannaman
Linda Hansen
N. Prasad Kadambi
Ronald King
John Lehner
Charles Martin
Herbert W. Massie
Kevin O’Kula
Steve Schultz
Undine Shoop
Ian Wall
Donald Williams, Jr.
Gary E. Wilson
Larry Zull

ab2@psu.edu
bari@bnl.gov
budnitz@pacbell.net
diamond@bnl.gov
joseph.green@shawgrp.com
hannamang@saic.com
hansen@anl.gov
npk@nrc.gov
kingrw@cableone.net
lehner@bnl.gov
charlesm@dnfsb.gov
herbertm@dnfsb.gov
kevin.okula@wsms.com
spschultz@duke-energy.com
uss@nrc.gov
ianwall@alum.mit.edu
williamsdljr@ornl.gov
KatJon@ida.net
larryz@dnfsb.gov

Honors and Awards Committee:

Robert Bari
Allen Camp
L. Walter Deitrich
Joseph Green
Steve Schultz
Jan van Erp

bari@bnl.gov
alcamp@sandia.gov
deitrichlw@earthlink.net
joseph.green@shawgrp.com
spschultz@duke-energy.com
vanerp@AOL.com

Liaison and Coordination

Sharon S. Kerrick (ANS Staff Liaison)..... skerrick@ans.org
Gary E. Wilson (NISD Newsletter/Web Site Coordination) KatJon@ida.net