



Message From the Chair By Kevin O’Kula

In the first quarter of this year, I had the opportunity to join with approximately sixty nuclear safety and related discipline professionals to review processes and practices at the Sellafield Site in the United Kingdom. The review team was made up of subject matter experts from three Sellafield management team companies including URS (my parent company), AREVA (France), AMEC (United Kingdom), combined with expertise from the operating contractor. We performed a review of nuclear safety, environmental, engineering, waste management, quality assurance and other core areas through a number of focused teams, leading ultimately to a “gap analysis” on what was found regarding procedures, practices, and policies and best practices throughout nuclear industry. The various teams offered recommendations and innovations to close these gaps. The review work tasks, opportunity to form professional relationships, and overall cultural/travel opportunities in the UK provided the basis for an exhilarating, rewarding experience. However, during this time and especially afterward, I was struck by how much I had learned and benefitted from the British compared to my humble contribution of observations and recommendations. So, too, goes volunteering and contributing to ANS, and specifically, to our Nuclear Installations Safety Division.

If you are like me, expectations are strong initially that volunteer work related to a technical, charitable, or other non-profit type entity will be mostly, if not entirely, one-way: giving far more than receiving. But similar to the sharing of recommendations and lessons learned with my colleagues from the UK, I have found that getting involved with ANS at some level brings forth the epiphany that one is getting back much more in return. Whether at the local level, or at the national or international levels, the simple message is that we need your involvement during these important times in nuclear safety. The “takeaway” from these efforts will easily exceed your investment. At the local level, consider opportunities to provide an informed voice to policy deliberations, develop letters/input to local media, volunteer to speak with local students on nuclear science & technology issues of the day, and get involved with the local or plant section. At the national level, look for opportunities to discuss your work in an NISD session during the June or November meetings or a topical meeting, mentor new professionals, contribute to a technical publication, or help us craft the technical programs that spark interest and lead to the settings for an exchange of ideas. Three near-term possibilities at the national level with NISD emphasis are covered in the Topical Meetings article found elsewhere in this newsletter.

Before closing, I have a specific request of employers of new professionals to the nuclear installations safety area. Although travel budgets are trending downward as organizations try to remain viable in a poor economy, I ask that you attempt to support the attendance of at least one new professional to an ANS meeting in the next year. In particular, the Young Members Congress in Washington, D.C. in November 2009 could be an instrumental event in many organizations’ planning for the leadership of tomorrow (see the related article in this newsletter). Attendees to the Congress can also take the Source Term Quantification for Nonreactor Nuclear Installation Safety

Analysis course on Sunday, November 15, to be given by Jofu Mishima.

Finally, the opportunity to serve as Chair of NISD for the past year has been an extraordinary honor. It was a pleasure to serve the NISD membership. Indeed, I found numerous examples of gaining insights and learning from colleagues while hopefully continuing to guide NISD in its mission within ANS. A long-time nuclear safety leader, John Kelly, is incoming Chair, and is no stranger to most of our membership. John has handled many roles in NISD and ANS, including Program Committee Chair and will be an outstanding NISD leader.

Message From the Vice-Chair By John Kelly

On an annual basis, the NISD Executive Committee reviews and updates the strategic plan for the Division. The updated plan is completed by the end of the calendar year and sets the priorities for the following year. The plan can be found on the NISD website at <http://nisd.ans.org/>.

Recognizing the importance of engaging with the young people entering the workforce, the top priority for this year is supporting the Young Members Group (YMG). One of the core missions of ANS YMG is to promote the retention and recruitment of young professionals into the Society as a whole as well as coordinating with the other ANS Divisions to match young professionals with opportunities open to them on working groups, committees, codes and standards, and governance roles within the society.

This year the Division is sponsoring a number of initiatives to accomplish this goal. First, we are providing financial support to YMG activities including the Young Professionals Congress at the 2009 Winter Meeting in Washington. This financial support also extends to students to allow their participation at national meetings. Second, the Division is sponsoring a session entitled “Evolutions in Nuclear Plant Safety” at the Congress, which is intended to provide an historical perspective on the evolution of safety analyses in the multiple disciplines that comprise nuclear plant safety. If you are interested in presenting, please see the call for papers at <http://www.ans-ypc.org/>. Finally, we are encouraging our membership to engage in the mentor program. Many young professionals are interested in this, so if you attend the national meetings please consider being a mentor.

Honors & Awards Committee By Jan Van Erp

The Theos J. (Tommy) Thompson Award for Nuclear Safety for the year 2009 will be presented to Shunsuke Kondo in recognition of a lifetime of outstanding contributions to the safe application of peaceful nuclear energy. Dr. Kondo is the current chairman of the Atomic Energy Commission of Japan and a past member of the NISD Executive Committee. Prior to his appointment to high governmental service in Japan, Dr. Kondo was professor of nuclear engineering at the University of Tokyo. The primary nominators for this 2009 award were: Hisashi Ninokata (Tokyo Institute of Technology), Masao Hori (Systems Association, Japan), Bob Bari (Brookhaven National Laboratory) and Allen Camp (Sandia National Laboratory).

The award is scheduled to be presented during the ANS Winter Meeting in November 2009. NISD members are



encouraged to attend the awards ceremony in November and to welcome a good friend and outstanding colleague.

Nominations for the two NISD awards -- the Theos J. (Tommy) Thompson Award and the George C. Laurence Pioneering Award -- may be submitted at any time. To be considered for the NISD awards in the year 2010, the nominations must be received prior to December 1, 2009.

Program Committee By Larry Zull

The NISD will sponsor five paper sessions at the Annual Spring Meeting in Atlanta, GA, June 14-18, 2009, Hyatt Regency as follows:

- Management of Materials Degradation and Life Extension for Older Nuclear Facilities, Tues. a.m.,
- Progress in Regulation of Safety Culture, Tues. p.m.,
- Probabilistic Applications in Nuclear Installations Safety, Wed. a.m.,
- Emerging Issues in Reactor Safety—I, Wed. p.m.,
- Emerging Issues in Reactor Safety—II, Thurs. a.m.,

The papers in each session are listed in the Preliminary Program that was mailed to you, or on-line at www.ans.org. The Atlanta meeting may break recent attendance records, and will be a very good technical meeting. Attendees will learn things at the meeting before the information becomes common knowledge. As shown in the program, there will be lots of sessions on various subjects to attend, and lots of activities for spouses or a guest the week of the meeting.

My term as Chair of the Program Committee ends after the Atlanta meeting, and I would like to thank all those who participated in ANS activities this past year. To those who have not participated, may I suggest that you become involved in NISD activities in the future. I personally have gained more from my participation in ANS than I thought possible. The next ANS meeting is in Washington, DC November 15-19, 2009. The Call for Papers is on the ANS web site, so pick a session for a paper you may be submitting and start writing. The paper only needs to be between 450 and 900 words. If you can attend the Atlanta or Washington meetings, you are also welcome to attend the Program Committee and Executive Committee meetings. Check the meeting program for exact times and location (also shown below).

Progress in Regulation of Safety Culture By Charles Martin – Special Session at Spring Meeting in Atlanta, GA

Since its origins in the 1980's, the concepts of safety culture and the understanding of how organizational leadership, structures, policies, and practices influence the behaviors and beliefs of workers continue to mature. Significant progress has been made in high-risk commercial operations, such as nuclear power stations and aviation that are regulated by government agencies. In these cases, both the commercial entities and the regulatory agencies have clearly understood goals; the commercial entities are attempting to provide a product or service for profit, and the agencies are attempting to ensure the safety of workers, public, and environment from the potential risks involved with the product or service. The situation is different in the case of self-regulated government agencies, as some of them continue to struggle with improving the safety culture of their organizations. Examples of self-regulated agencies include the U.S. Department of Energy and

the National Aeronautics and Space Administration. This session will explore progress made in the regulation of safety culture in both of these sectors.

Papers/Panelists:

- Measuring Safety Culture, Peter Winokur, Douglas M. Minnema (DNFSB)
- Development of a Policy Statement on Safety Culture, June Cai (NRC)
- Integrated Safety Management System Safety Culture Improvement Initiative, John McDonald (Washington River Protection Solutions, LLC)
- Cultivation of Safety Culture Within the Department of Energy, Richard S. Hartley (B&W Pantex)
- Assessing the Free Flow of Information in Support of Organizational Safety Culture, Eric V. Fries (Equinox Consulting LLC)
- Leading Indicators and the Significance Determination Process, Chip Martin (DNFSB)

Topical Meetings of Interest to NISD

Three embedded topical meetings occurring in November 2009 and June 2010, are sponsored or co-sponsored by NISD, and need your support. Included are:

1. **Young Members Congress**, November 15-19, 2009 will be an embedded topical in the ANS Winter Meeting in Washington, D.C. YPC2009 will provide an opportunity for young professionals in all fields of nuclear science and technology to share their technical and non-technical professional experience with their peers through oral presentations, poster sessions, and publication of extended summaries. Five tracks are planned and in particular, Track 2 Session 2B (Evolutions in Nuclear Plant Safety) is NISD-oriented. Contact Rob Andre for additional information (rdandre@gmail.com) or see the ANS website (<http://www.ans-ypc.org/>).

2. **Risk Management 2009**, also is part of the ANS Winter Meeting in Washington, D.C. The RM4TC meeting will be the fourth in a continuation of a series of successful meetings on risk management which were held in 1989, 1992, and 2003. The 2009 meeting will seek address the broadest possible perspective on the wide range of risks that face the nuclear industry and other high-hazard industries. The objective of the meeting is to provide a forum for management, safety-specialist, and risk management personnel to come together, discuss issues, and share ideas regarding risk management. YPC2009 will provide an opportunity for young professionals in all fields of nuclear science and technology to share their technical and non-technical professional experience with their peers through oral presentations, poster sessions, and publication of extended summaries. Contact Ron Knief for more information (raknief@sandia.gov), or check the website at <http://meetings.ans.org/riskmanagement/>.

3. **Second International Meeting of the Safety and Technology of Nuclear Hydrogen Production, Control and Management** (2IST-NH2) is going to be held during the June 2010 ANS Annual Meeting in San Diego, CA (June 13-17). Contact Kevin O'Kula (kevin.okula@wsms.com) for information on hydrogen control and safety topics at the topical,



and Steve Herring (j.herring@inl.gov) for information on nuclear hydrogen production topics.

NISD Election Results

Congratulations to the winners of the 2009 ANS NISD election:

- **Chair:** John E. Kelly
- **Vice Chair/Chair-Elect:** Michael L. Corradini
- **Secretary/Treasurer:** No Election in 2009
- **Executive Committee - 3 Year Term**
 1. Anthony J. Baratta
 2. Stanley H. Levinson
 3. Jack W. Roe

Professional Development Course in Washington, D.C. by Jofu Mishima

NISD will sponsor a Professional Development Course in Washington, D.C. at the 2009 Winter Meeting entitled, "Source Term Quantification for Nonreactor Nuclear Installation Safety Analysis". This course will provide an overview of the development and quantification of radiological source terms in nonreactor, nuclear installation accident analysis. The methodology described introduces the five-factor formula for estimating accident source terms and focuses on the resulting source term from the major types of accidents, including spills, fires, explosions, seismically induced vibrations and impacts, and criticalities. While each of the five parameters comprising the five-factor formula is covered, including the material at risk (MAR), damage ratio (DR), airborne release fraction (ARF), respirable fraction (RF), and the leak path factor (LPF), the major portion of discussion will center on estimation of the ARF and RF parameters.

The material forms considered in this course are those often encountered in the nuclear fuel cycle and include: (1) gases, most specifically tritium; (2) liquid solutions, both organic and aqueous; (3) solids, including metals, bulk powders, aggregates, spent fuel and other special forms; and (4) surface contamination, whether in the form of holdup in processes, material entrained in waste, or soil contamination. Guidance is provided and the relevant experimental data cited to allow the workshop participant to quantify the amount of radiological material released from a given confinement volume by a phenomenological event.

Examples of the type of thought processes used in parameter determination are provided throughout the course. Source and distributions of relevant data are discussed, as well as good practices for determining median and bounding values from experimental data. The curricula guides the participants on the most critical aspects of source term evaluation, but especially concentrates on how one determines defensible estimates of the ARF and RF evaluation, drawing primarily from Department of Energy Handbook, DOE-HDBK-3010-94, *Airborne Release Fractions/Rates and Respirable Fractions for Nonreactor Nuclear Facilities*, as well as related documents including NUREG/CR-6410, *Nuclear Fuel Cycle Facility Accident Analysis Handbook* and ANSI/ANS Standard 5.10, *Airborne Release Fractions at Nonreactor Nuclear Facilities*.

The eight-hour course is designed to provide first-person perspectives from a pioneer in the field, and concentrates on the development of a radiological source term from postulated accident conditions in a nuclear installation. Thus, it is particularly useful to those in DOE and NRC safety analysis who are new to the area, with little or no field/facility experience. Thus it is very useful to those in early career phase, as well as those transferring from another branch of nuclear science and technology and who wish to accelerate their understanding of accident conditions and associated source term phenomenology.

The workshop is led by Jofu Mishima, a nuclear safety consultant and experimentalist with over fifty years experience in nuclear material testing and source term studies at several Hanford laboratory facilities. Mr. Mishima was the chief author and coordinator for several leading collections of methodology guidance and data that have become mainstays in the nuclear installation accident analysis field, including NUREG-1320; DOE-HDBK-3010-94; NUREG/CR-6410; ANSI/ANS-5.10-1998; ANSI-N3.10-1999; ANSI-N14.5-1997.

Scheduled NISD Meetings

All NISD members are welcome to attend the following NISD committee meetings at the June 2009 Meeting in Atlanta, GA:

- Program Committee: Sunday, 4:00 P.M. – 6:00 P.M.
LOCATION: Kennesaw
- Executive Committee: Sunday, 7:30 P.M. – 9:30 P.M.
LOCATION: Kennesaw

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 June 16, 11:30am-1:00pm in the Regency VII room. Tickets can be purchased in advance or on-site at the ANS Registration Desk for \$50.

Student Scholarships Sponsored By NISD

The recipient for the 2009 Saul Levine Memorial scholarship is Bao H. Truong from the Massachusetts Institute of Technology.

The Saul Levine and Raymond DiSalvo Memorial Scholarships have become fully funded. Descriptions of these scholarships can be accessed at the NISD Website (see below for address). Graduate students interested in applying for the Saul Levine scholarship can access the Eligibility Requirements and Application Form at <http://www.ans.org/honors/scholarships>. Undergraduate students can apply for the Raymond DiSalvo Scholarship at the same website address.



NURETH-13

The 13th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-13) in Kanazawa, Japan, is scheduled for September 27 - October 2, 2009. General information about the conference can be accessed at <http://www.nureth13.org/>.

NISD Website

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

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