

# Operations and Power Division

## 2011 Utility Working Conference Special Edition

**“It’s Not Easy Being Green: Innovations for Continued Safe, Secure, and Competitive Nuclear Operation”**



You are invited to attend...

**2011 ANS Winter Meeting and  
Nuclear Technology Expo  
"The Status of Global Nuclear Deployment"**

Embedded Topical Meetings:  
*1<sup>st</sup> Annual ANS SMR Conference*  
*2011 Young Professionals Congress*  
Professional Development Workshops:  
*Nuclear Export Control and Legal Aspects of Nuclear  
Regulations*  
*Neutron Cross Sections for Nuclear Engineers*

October 30-November 3, 2011  
Washington, D.C.  
Omni Shoreham Hotel

**OPD Scheduled Meetings**

**OPD Nuclear Construction Working Group  
Sunday, October 30, 2011**

**OPD Program Committee  
Sunday, October 30, 2011**

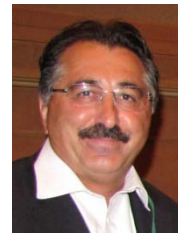
**OPD Executive Committee  
Sunday, October 30, 2011**

***These meetings are open to all OPD  
members, and everyone is encouraged to  
attend or participate via teleconference.***

See Our Website at . . .  
[opd.ans.org](http://opd.ans.org)

Don't forget the 2012 ANS Annual Meeting:  
June 24-28, 2012  
Chicago, IL  
Hyatt Regency Chicago

## From the General Chair Amir Shahkarami



Dear Colleagues and Friends,

2011 provided a major milestone to the UWC with a decision to move the conference from Amelia Island to Hollywood. This new location gave us the space for additional tracks and therefore additional content as well as a more vendor exhibits. The move also presented the organizing committee and the ANS conference staff with new challenges. We had the best team in place to work through the logistics and the result was an excellent program, expanded technical sessions, a greater number of sponsors, more vendor participant and top speakers.

At the end of the day the organizers' work paid off and my hat goes off to Chris Wiegand, the Technical Program Chair and all of the track leaders and organizers. From key note speakers to the Fukushima session to every track I received positive feedback and learned some things that we can do better. Now that the bar is raised I look forward to even greater success next year when Mike Skaggs and L.E. (T-Bow) Thibault, both of Tennessee Valley Authority, take over. I hope you will join us in giving them all the support they need.

Amir Shahkarami  
CEO Exelon Nuclear Partners  
Senior VP, Exelon Generation

## Key Note Speakers

**John Rowe**, *Chairman and Chief Executive Officer, Exelon*, opened up the 2011 UWC with a speech entitled “My Last Nuclear Speech”. The bottom line was a reminder that of the four preconditions for building a new nuclear plant – Right Reactor Technology, Workable Solution to Waste Problem, Need for New Generation and Natural Gas (high prices/low supply) – only the Right Reactor Technology precondition has been met.

**James (Jim) O. Ellis, JR.** opened the second day with “*Once Again...Let’s Do the Right Thing*”. Mr. Ellis gave the attendees a sobering reminder that “Energy generates prosperity” and that while nuclear power has not lived up to the promise of electricity that is “to cheap to meter” nor have nuclear power transportation vehicles (i.e. cars and airplanes) become a reality, that the world is depending on us to continue to meet the challenges faced and expand prosperity. After describing “Global Nuclear Safety” as a “... coalition of the willing” and providing an overview of that coalition, he reminding us of Winston Churchill’s words that “it is not enough to do our best. We have to do what is required” and challenged the global nuclear industry to “...do the right thing...and do it now.”

Finally, the last day of the conference was opened by **Dr. Charles J. Camarda**, *Senior Advisor for Innovation to the Office of Chief Engineer, Johnson Space Center*, describing the decision history of the Space Shuttle program with stark parallels between the history of the nuclear industry and the space program.

## UWC Attendance

**Technical Program Chair – Chris Wiegand**  
([christopher.wiegand@invensys.com](mailto:christopher.wiegand@invensys.com))

**Assistant TPC – Ludwig (T-Bow) Thibault**  
([lethibault@tva.gov](mailto:lethibault@tva.gov))

**Assistant TPC – Mike Spellman**  
([michael.spellman@pgnmail.com](mailto:michael.spellman@pgnmail.com))



**Conference attendees share breakfast on the patio while sharing best practices and experience**

In 1994, a small but determined group of leaders within the Operations and Power Division conducted the first UWC in Amelia Island, FL with a goal of creating a venue that was conducive to working, sharing and learning from one another’s experience. From this small beginning, the UWC has grown into a major nuclear industry conference. In 2011 we finally had to move the conference from its home in Amelia Island to a location in Hollywood, FL that could accommodate the more than 750 participants who attended in 2011 and twelve specialized tracks.

The 2011 conference saw the addition of the Security, New Reactors, Maintenance and Long Term Operation. The addition added to the breadth of the information sharing that took place at the conference.

In addition to the increased attendance from nuclear utility professionals, the new location allowed for over 100 nuclear vendors to display their products and services in the Vendor Technology Expo. The Vendor and Technology Expo was a valuable meeting area for the conference allowing nuclear utility professionals to browse innovative products and services and speak with company representatives about their particular challenges and possible solutions.

With the incredible growth in both attendance and scope, one can only wonder if the organizers of the 1994 conference imagined the final result of what they had started.

# Track Summaries

## 2011 Utility Working Conference Special Edition

### Cyber Security/Digital I&C

**Track Leader – Glen Kaegi**  
([glen.kaegi@exeloncorp.com](mailto:glen.kaegi@exeloncorp.com))  
**Track Leader – Rob Austin**

Cyber security was a new topic at the UWC this year. With the advancement of cyber related threats including those targeting process control facilities it was quite prudent to add this topic as a component of the Digital I&C track. Utility representatives from a number of nuclear companies in the United States presented topics on both previous and current efforts to secure the sites from the ever present cyber threat. The information exchanged coupled with the excellent participation of the audiences provided great insights and ideas into the multi-layered defensive strategy incorporated into the nuclear power plant process control infrastructure. The significant interest displayed by conference attendees assures that this topic will remain on the agenda for the foreseeable future!

### Engineering

**Track Leader – George Attarian**  
([george.attarian@pgnmail.com](mailto:george.attarian@pgnmail.com))

The Engineering Track tackled challenges that are facing all commercial nuclear plants today. We started with a cable reliability session to address that fact that both regulator and utility have great interest on what needs to be done to manage the aging of cables. This session focused on the technical aspects of medium voltage cable aging, how to detect degradation, and how to maintain desired reliability from the perspectives of technical consultants and utilities. We heard from utility engineers and vendors about “Cable Aging and Detection” as well as “Maintaining Cable Reliability.”

We followed cable reliability with a session on general equipment reliability where we shared real-life experiences focusing on specific improvements in component equipment reliability from a technical perspective and then with a well-attended and intensely participatory session focused on *Understanding Equipment Reliability Workload*

The *Emergent Industry/Regulatory Issues Impacting Engineering* topic focused on the Nuclear Utility Industry’s commitment to an inspection program for underground piping and tanks through Revision 1 of NEI 09-14, Guideline for the Management of Underground

Piping and Tank Integrity. This presentation provided an overview of EPRI projects which are identifying and bringing technologies to the nuclear industry to inspect buried piping as well as assess the capabilities of specific technologies such as guided wave, electromagnetics, and traditional ultrasonics. Among others, the presentations included “The Exelon Fleet Approach” to buried piping integrity. The next regulatory issue addressed was *Strategies for Addressing ECCS Suction Strainer Regulatory Concerns for PWR’s and BWR’s* followed by a panel discussion for *Managing Engineering Challenges*. The sessions were well attended and so interactive that the discussions went well beyond the session time and were often continued informally in the Vendor and Technology Expo.

### Executive

**Track Leader – Richard Cole**  
([recole73@hotmail.com](mailto:recole73@hotmail.com))

**Paul Rushton**, *Operational Readiness Director, SNC Vogtle Units 3 and 4*, and **Lisa Brattin**, *Industry Learning & Development Director, INPO*, led a “*Recruiting and Training the Workforce to Support Long-term Industry Growth and Safe Operations*” interactive discussion. This session, with participation by executives from across the industry, focused on ensuring that we have the infrastructure along with a highly trained and motivated workforce. The discussion focused on efforts underway to support the new generation of plants being constructed, including lessons learned from workforce planning from an executive perspective.

The Executive Track session “*Working with the Regulator and Industry to Ensure Public Support for Industry Growth*” was led by senior executives from both the NRC and the NEI which was followed by a senior executive panel discussing “*Strategic Planning to Support Growth in a ‘Green’ Nuclear Industry*” and finally an executive roundtable led by **Amir Shahkarami**, *CEO, Exelon Nuclear Partners*.

## Knowledge Management/ Workforce Issues

Track Leader – Donald Hoffman  
([donalddh@excelservices.com](mailto:donalddh@excelservices.com))



**Zoltan Pasztory, NKM Group Leader at IAEA presents the IAEA Global NKM Survey that has been completed by over 50% of NPPs worldwide. He also introduced the newly created POKM Coordinated Research Project on behalf of participants from Bulgaria, China, Malaysia, Romania, Russia and the USA. This project implements Process-oriented Knowledge Management by 2013.**

The KM-WF Issues Track presented state-of-the-art presentations in all sessions on broad topics such as Sustainable Long Range Workforce Planning, Knowledge Capture during Culture Change, Renewable Energy Technologies and Energy Park Development including multi-state workforce development programs for Southern Company, Savannah River and SCANA. This is the fourth year of this track and progress in this discipline has significantly increased since 2007. Over 20 speakers participated in the sessions from utilities, suppliers, university R&D, the IAEA and international case study representatives as well as DOE and utility Energy Park development executives.

Geographical representation was widespread including Alaska, China, Switzerland, Austria and Bulgaria. Renewable energy topics included, batteries, biomass, hydro pumped storage, energy storage, solar and wind. Several sessions were aimed at achieving increased understanding about “Green Energy Sources” as well as their state of development and limitations of use. Dr.

James Conca also presented a strong case for more U.S. involvement in “The Geo-Politics of Energy” whereby we can influence developing nations to make smart green choices or we otherwise will see dire ecological consequences.

## Long Term Operation

Track Leader – John Gaertner  
([jgaertner@epri.com](mailto:jgaertner@epri.com))

## Ensuring High Performance in Extended Life

The Long Term Operation Track addressed proactive efforts to ensure continued high performance operation of existing nuclear plants during their extended life. This includes the technical basis for license renewal beyond 60 years. Session I presented the strategic collaborative activities of industry and U.S. DOE to support, by 2014 to 2019, utility decisions whether and how to operation beyond 60 years. Session II addressed the important role of power up-rates in long term operations from the point of view of OE vendors and utilities now involved in major up-rates.

Each of the other five sessions focused on a particular life-limiting concern, such as Aging of Containment and Primary System Metals; a modernization opportunity such as Advanced Information and I&C Systems; or an enabling technology such as Enhanced Safety Analysis and Integrated Life Cycle Management of plant assets. The sessions were stimulating and spirited, and they set the stage for considerable progress in these areas before the 2012 UWC meeting.

## Maintenance

**Track Leader – Chris Wiegand**  
([christopher.wiegand@invensys.com](mailto:christopher.wiegand@invensys.com))

2011 marked the initial inclusion of a maintenance track to the UWC list of functional area tracks. As an initial offering the track attendance was not as large as the established tracks; however feedback from the participants was that the track topics were very valuable and timely. Maintenance track participants committed to working on the track for next year and getting the word out about its value.

Although there were many highlights from the track sessions, of particular note were the following sessions:

1. *“Putting RFID to Work in Nuclear Power Generation”*, this session was organized by **Bart Hickman** of Alphasource and included **Rick Raber**, of Northern Apex Corporation and Utility representatives Rich Carpenter of PPL Susquehanna and **Charles Harris** of Exelon Nuclear. This session covered the actual site experience and benefits to maintenance organizations in utilizing RFID. Participants were able to see how Exelon and PPL Susquehanna improved FME performance and tool tracking as well as other site functions from the use of RFID.
2. *“Taking Advantage of Modern Technologies for Nuclear Power Plant Productivity Improvements in Maintenance and Other Activities”* this session was organized by **Dr. Joe Naser** of EPRI and included **Gus Spivak** and **Brian Williams** of Price Waterhouse Coopers. The session provided ideas and examples in using both hardware and software to address efficiency improvements in executing work.
3. *“Increasing Operation Efficiency and Workforce Productivity Without Compromising Safety Using an Integrated Mobile EOM”*, this session was presented by **Chuck McVicker** of Ventyx ABB. This presentation provided examples and opportunities in using asset management programs with mobile devices to improve work execution and flow.

In all, the track provided some significant take-aways for the participants and the feedback is that the track is

something worth growing and developing for future UWC’s.

## New Reactor

**Track Leader – Mark McBurnett**  
([mamcburnett@STPEGS.COM](mailto:mamcburnett@STPEGS.COM))

**Track Leader – Dave Matthews**  
([david.matthews@nrc.gov](mailto:david.matthews@nrc.gov))



**A packed room focused on an informative New Reactor presentation**

The New Reactors Track had two sessions detailing plans, experience and challenges with utility oversight and NRC regional and headquarters inspection of new reactor construction including presentations by NRC and industry representatives with direct experience at Vogtle.

The focus was on ensuring follow-on plants learn from these experiences. These sessions were followed by industry and NRC senior managers discussing key real time challenges and experience in implementation of Part 52. There were two sessions on small modular reactors with key industry and NRC representatives discussing how to challenge the status quo with a provocative look into a non-traditional paradigm. The last two sessions were focused on lessons learned and challenges with Environmental Reviews for Early Site Permits and Combined Licenses based on actual experience with these processes. Presentations were made from both an NRC and industry perspective with a focus on improving the processes involved.

## Operations

Track Leader – Cheryl Gayheart  
 ([cheryl.gayheart@exeloncorp.com](mailto:cheryl.gayheart@exeloncorp.com))



**Dick Stott, Exelon Nuclear’s corporate Plant Status Control Program owner, explains actions taken over the last two years to decrease the number of events related to plant status control**

The 2011 ANS UWC Operations Track kicked off this year with several interactive sessions geared toward improving Operations in the industry. Pilot plants discussed the new Crew Performance Evaluations (CPE) that will commence in March of 2012. Pilots have been done at multiple utilities with a full scale pilot week schedule discussed by Oyster Creek Station. The presentation went over questions that were used to test operator knowledge as well as what learning’s were gained for those giving and receiving the new CPE. To build on the importance of Operations Training a panel discussion was held with operations and training members from Duke Energy, Progress Energy and Exelon Generation to explore different methods used to improve operator’s performance in the training setting. Lastly, innovative methods for Plant Status Control were discussed by operations and maintenance including the use of a modified ball valve handles to eliminate the risk of bumping valves during maintenance and use of plant status control committees used to discuss and challenge events that occur at our power plants. The conference was a success as the attendee provided both input to the different venues as well as suggestions for the 2012 conference.

## Performance Improvement

Track Leader – Dave Gudger  
 ([david.gudger@exeloncorp.com](mailto:david.gudger@exeloncorp.com))  
 Track Leader – George Hutcherson  
 ([hutchersongi@inpo.org](mailto:hutchersongi@inpo.org))



**Participants in the Performance Improvement Track discuss industry efforts to improve Safety Culture**

The presentations and discussions during the Performance Improvement Track at this year’s Utility Working Conference were wide-ranging and diverse. Topics included specific performance improvement examples like *the interventions needed to instill a performance culture at Yucca Mountain that was needed to successfully complete the license application* and broader discussion areas such as *the importance of the human element in any performance improvement process*.

The track sessions also attracted participants from virtually all parts of the nuclear industry – suppliers, consultants, utilities, regulators, government agencies, and utility support organizations. Most sessions included a good bit of attendee participation and a “questioning attitude” was certainly on display. As a result, the discussions were vibrant throughout, and issues were addressed from a wide variety of viewpoints.

## Regulatory Relations/Oversight

Track Leader – Gordon Arent

([garent@tva.gov](mailto:garent@tva.gov))

Track Leader – Eric Leeds

([eric.leeds@nrc.gov](mailto:eric.leeds@nrc.gov))



**The Regulatory Relations/Oversight session on Engaged, Thinking Organizations drew a large crowd**

The Regulatory Relations technical sessions were well attended and very informative. The session topics included containment accident pressure, buried piping and groundwater protection, criticality, cyber security, extended power uprates, quality licensing submittals, and engaged thinking organizations. The sessions were conducted in such a manner that allowed and encouraged open dialogue between the panelists and the audience. This allowed the audience to directly interact with senior managers and subject matter experts from industry including contractors, the Nuclear Energy Institute, the Institute of Nuclear Operations, and the Nuclear Regulatory Commission in a frank and open atmosphere. Feedback from attendees indicated that these types of sessions were very informative and people appreciated the chance to directly address the participants with ideas and issues.

## Risk Management

Track Leader – Greg Krueger

([gregory.krueger@exeloncorp.com](mailto:gregory.krueger@exeloncorp.com))



**Bob Rishel from Progress Energy discussing training of a new generation of risk professionals**

The 2011 Risk Management track had a diversity of topics applicable to development and application of risk information from a variety of industry experts. The session highlighting the relationship of risk perception and the potential impact from the Fukushima event on future use of risk information had such large attendance that only standing room was available. Topics in this session included, “Are the Probabilistic Risk Assessment Models wrong” and a presentation on a systematic approach to determine needed capabilities for a similar event at other nuclear facilities. Additional interesting topics included the pilot method to risk inform the Containment Sump issue GI 191 to allow closure of the issue, developing high performance teams for the future of risk management applications, as well as training and managing the new generation of risk professionals.

## Work Management/ Project Management

Track Leader – Jeannie Rinckel  
([jmr@nei.org](mailto:jmr@nei.org))



**John Klein, TVA Maintenance  
Functional Area Manager, facilitates  
the Work Management Workshop**

Audience participation was the goal of the Work Management/Project Management coordination committee for the 2011 ANS Utility Working Conference and the goal was successfully satisfied!

The panel session format provided interactive dialogue in three sessions: Managing Recovery Projects – Warning Signs, Intervention and Recovery, Improving Work Management Thru Process Improvement, and Demystify Digital Technology sessions. Subject matter experts from the utilities and the contractors provided several informed perspectives which allowed the audience to question the experts directly.

The workshop format was used for the Integrated Approach to Managing Our Workload – Part 1 and Part 2. With the help of the pre-conference survey, the session facilitators were able to provoke audience participation to develop mini-change plans addressing the top issue associated with the identification and performance of work.

The WM/PM track was led by Jeannie Rinckel with credit going to Jon Anderson, Cynthia Broadwell, Ian Falk, Bill Flanagan, and Chris Vlahoplus for their excellent preparation and planning.



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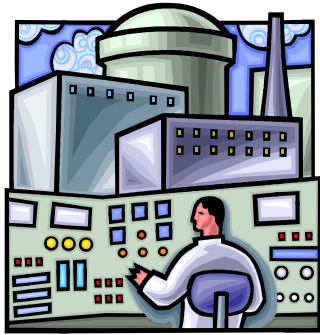
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