



ANS

2013



UTILITY WORKING CONFERENCE AND VENDOR TECHNOLOGY EXPO

August 11-14, 2013



Hollywood, Florida
Westin Diplomat

***“Nuclear Power:
Teaming for the Future”***

Official Program



Thank You to Our Sponsors

The organizations listed below have made an outstanding contribution to the success of the **2013 Utility Working Conference and Vendor Technology Expo** and to the enjoyment of the attendees and their guests through their generous sponsorship.

Sunday, August 11, 2013

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Sponsor of the "Grab and Go Breakfast"

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Monday, August 12, 2013

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Westinghouse Electric Company

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Thank You!

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Condensed Conference Schedule

SUNDAY, AUGUST 11, 2013

8:00 a.m. Golf Tournament
“Grab and Go Breakfast”– Sponsored by System One,
2013 UWC Golf Tournament Awards Luncheon–
Sponsored by Invensys

3:00 p.m. – 7:00 p.m. Meeting Registration

6:00 p.m. – 8:30 p.m. Opening Reception in the Vendor
Technology Expo*
Beer/Wine/Soft Drinks– Sponsored by Entergy
Nuclear,
Cold Appetizers– Sponsored by Lockheed Martin
Blended Bars– Sponsored by Mitsubishi
*Followed by the Cordial and Dessert Reception

MONDAY, AUGUST 12, 2013

7:00 a.m. – 4:30 p.m. Meeting Registration

7:30 a.m. – 8:30 a.m. Continental Breakfast in the Vendor
Technology Expo

8:30 a.m. – 10:00 a.m. Opening Plenary: “Nuclear Power – Teaming for
the Future”

Keynote Speakers:

- Donald Hoffman (ANS President, President and CEO, EXCEL SERVICES CORPORATION)
- Rodger Dean Duncan (Author and Business Consultant)
- Commissioner William C. Ostendorff (Commissioner, NRC)

10:00 a.m. – 10:30 a.m. Refreshment Break in the Vendor
Technology Expo
Sponsored by Tennessee Valley Authority

10:30 a.m. – 12:00 p.m. Breakout Sessions

12:00 p.m. – 1:30 p.m. Walk-Around Luncheon in the Vendor
Technology Expo
Sponsored by Westinghouse Electric Company

1:30 p.m. – 3:00 p.m. Breakout Sessions

3:00 p.m. – 3:30 p.m. Afternoon Refreshment Break in the Vendor
Technology Expo
Sponsored by Entergy Nuclear

3:30 p.m. – 5:00 p.m. Breakout Sessions

TUESDAY, AUGUST 13, 2013

7:00 a.m. – 8:30 a.m. Sunrise Breakfast
Sponsored by Sargent & Lundy LLC

7:00 a.m. – 4:30 p.m. Meeting Registration

8:30 a.m. – 10:00 a.m. Plenary Session: “Nuclear Power – Teaming
for the Future”

Keynote Speakers:

- John Conway (Senior Vice President of Energy Supply, Pacific Gas and Electric Company)
- John E. Kelly Ph.D., (Deputy Assistant Secretary for Nuclear Reactor Technologies, DOE)

10:00 a.m. – 10:30 a.m. Refreshment Break in the Vendor
Technology Expo
Sponsored by ANS CNSTI

10:30 a.m. – 12:00 p.m. Breakout Sessions

12:00 p.m. – 1:30 p.m. Walk-Around Luncheon in the Vendor
Technology Expo

1:30 p.m. – 3:00 p.m. Breakout Sessions

3:00 p.m. – 3:30 p.m. Afternoon Refreshment Break in the Vendor
Technology Expo

3:30 p.m. – 5:00 p.m. Breakout Sessions

5:00 p.m. – 7:00 p.m. Reception in the Vendor Technology Expo
Beer/Wine/Soft Drinks–
Co-Sponsored by IBM, NGNP Industry Alliance
Limited and Toshiba America Nuclear Energy
Corporation

7:30 p.m. – 10:30 p.m. EXCEL SERVICES CORPORATION
Evening Event
“EXCEL’s Comic Book Adventures Extravaganza!”

WEDNESDAY, AUGUST 14, 2013

7:00 a.m. – 4:30 p.m. Meeting Registration

7:00 a.m. – 8:00 a.m. Continental Breakfast in the Vendor
Technology Expo

8:00 a.m. – 10:00 a.m. Industry Awards Presentation

Keynote Speakers:

- Donald Hoffman (ANS President, President and CEO, EXCEL SERVICES CORPORATION)
- Marvin S. Fertel (President and Chief Executive Officer, Nuclear Energy Institute NEI)
- Robert L. Gambone (Vice President, Plant Operations, INPO)

10:00 a.m. – 10:30 a.m. Refreshment Break

10:30 a.m. – 12:00 p.m. Breakout Sessions

12:00 p.m. – 1:30 p.m. Conference Luncheon

THURSDAY, AUGUST 15, 2013

7:00 a.m. – 10:00 a.m. Meeting Registration

8:00 a.m. – 4:00 p.m. Professional Development Workshop:
“Root Cause Analysis for Safety Culture and
Human Performance Improvement”
(limited to the first 30 who register)



The Westin Diplomat Resort and Spa

Accommodations/Hotel Information

The Westin Diplomat Resort and Spa, located at 3555 S. Ocean Dr., Hollywood, Florida 33019, will be the location for the 2013 Utility Working Conference, where all meeting activities and technical sessions will take place.

Airport shuttles to Fort Lauderdale and Miami airports are priced at \$13.00 and \$31.00 per person respectively.

Conference Registration

Registration is required for all attendees and presenters. Badges and tickets are required for admission to all events. The Conference Registration fee includes one ticket to each of the following events: Sunday Opening Reception; Monday, Tuesday and Wednesday Luncheons; and access to the presentations through the Online Knowledge Center.

NOTE: Additional tickets can be purchased in advance or on-site at the ANS Registration Desk for the Sunday Opening Reception and the Monday, Tuesday and Wednesday Luncheons.

Registration Hours:

The Conference Registration Desk will be located in the Great Hall Foyer of the Westin Diplomat Resort and Spa. You may register, purchase tickets for events or pick up your registration packet during the following hours:

Sunday, August 11, 2013 • 3:00 p.m. – 7:00 p.m.

Monday, August 12, 2013 • 7:00 a.m. – 4:30 p.m.

Tuesday, August 13, 2013 • 7:00 a.m. – 4:30 p.m.

Wednesday, August 14, 2013 • 7:00 a.m. – 4:30 p.m.

Thursday, August 15, 2013 • 7:00 a.m. – 10:00 a.m.

Cancellations:

Registrations canceled prior to July 19, 2013, will be refunded minus a \$150 processing fee. Cancellations received after July 19, 2013, will NOT be refunded. However, you may send a substitute.

Best Practices Poster Exhibit

The Best Practices Poster Exhibit showcases individual practices and projects submitted and displayed by many US Nuclear Power Stations and Nuclear Fleet Organizations. An hour spent at the exhibit is like dozens of informal benchmarks all in one place.

Hollywood, FL



Come see why Travel + Leisure named the Hollywood Boardwalk one of America's Best Beach Boardwalks. The Hollywood Beach Boardwalk, a 2.5-mile-long pedestrian promenade, bustles with joggers, skaters, cyclists and old-fashioned charm, a mere four steps from the beach's western edge. Rent wheels of the people-propelled variety and join the lively crowd on the brick-paved pathway. Also, Jet Ski rentals and cabana rentals are a breeze with outfitters along the Boardwalk. Seaside cafes facing the ocean are a great people-watching spot.



Hollywood is a culinary delight with dining and entertainment hot spots from city to shore. Find stunning waterfront views at seaside cafes and restaurants in Hollywood's Beach District and discover a veritable cultural feast in Hollywood's Downtown District. Getting here is easy, Hollywood is located only 10 minutes south of Fort Lauderdale and 10 minutes north of Miami. For convenient transportation between Hollywood's beach and downtown districts, take the Hollywood Trolley.

Many waterfront restaurants call Hollywood home, with everything from casual burgers, pizza and ice-cream to fine dining establishments. The Hollywood Beach Boardwalk, conveniently reached by trolley, has a large selection of food types and price ranges. On the Intracoastal waterway, dining options include fresh stone crabs from Billy's Stone Crabs and authentic Greek cuisine from Taverna Opa to the world-famous Le Tub, hailed by GQ magazine and The Oprah Winfrey Show for its burgers.



The Hollywood Trolley makes getting around Hollywood Beach a breeze. There is a stop right at the Westin front entrance which takes you to the center of the Hollywood Beach Boardwalk. The fare is only \$1!! You can also use The Water Taxi to get around town.

The Hollywood Beach Theater hosts free live music just about every night of the week, and a variety of cultural performances throughout the year. It's located right on the Boardwalk, and is adjacent to the Trolley Hub.



One of many fests held at Hollywood Beach, FL

Photos and copy courtesy of Hollywood, FL Community Redevelopment Agency

Detailed Session Schedule

Cybersecurity/Digital I&C

Digital I&C System Modernization and Licensing, Mon. 10:30 a.m. - 12:00 p.m.
The Critical Role of Human Factors Engineering in Operating and New Plant Control Rooms, Mon. 1:30 p.m. - 3:00 p.m.
U.S. Department of Energy Nuclear Plant I&C Research - Light-Water Reactor Sustainability (LWRS) Advanced II&C Pilot Projects, Mon. 3:30 p.m. - 5:00 p.m.
U.S. Department of Energy Nuclear Plant I&C Research - Nuclear Energy Enabling Technologies (NEET) ASI, Tues. 10:30 a.m. - 12:00 p.m.
U.S. Department of Energy Nuclear Plant I&C Research - Advanced Small Modular Reactor (AdvSMR) ICHMI, Tues. 1:30 p.m. - 3:00 p.m.
Cyber Security for Nuclear Power Plants: Regulatory Status and Lessons Learned, Tues. 1:30 p.m. - 3:00 p.m.
Electromagnetic Compatibility Issues with the Implementation of Digital and Wireless Equipment in Nuclear Power Plants, Tues. 3:30 p.m. - 5:00 p.m.
Wireless Technology Applications and Implementation in Nuclear Power Plants, Wed. 10:30 a.m. - 12:00 p.m.

Engineering

Advanced Reactors, Mon. 10:30 a.m. - 12:00 p.m.
What Will Our Future Generation Challenges Be? Ultimate Teamwork in Design and Operations, Mon. 1:30 p.m. - 3:00 p.m.
Regulatory Initiatives/Impacts, Mon. 3:30 p.m. - 5:00 p.m.
Next Generation Control Rooms - Impact on the Life on an Operator, Mon. 3:30 p.m. - 5:00 p.m.
Engineering Regulatory Initiatives/Impacts - Longer Term Issues, Tues. 10:30 a.m. - 12:00 p.m.
Industry Discussion, Engineering State of the Union, Wed. 10:30 a.m. - 12:00 p.m.

Executive

Current State of the Industry, Mon. 10:30 a.m. - 12:00 p.m.
U.S. Nuclear Strategy and its Future, Mon. 1:30 p.m. - 3:00 p.m.
Industry Expansion - Construction and Modernization, Mon. 3:30 p.m. - 5:00 p.m.
Industry Lessons Learned, Tues. 10:30 a.m. - 12:00 p.m.
The 2013 UWC and The Way Forward for the 2014 UWC, Wed. 10:30 a.m. - 12:00 p.m.

Knowledge Management/Workforce Issues

Succession Planning, Mon. 10:30 a.m. - 12:00 p.m.
Future Nuclear Workforce - Who- What- When- Where?, Mon. 1:30 p.m. - 3:00 p.m.
Human Capital Impact on Organizations - The People Health Committee Concept, Tues. 10:30 a.m. - 12:00 p.m.
Knowledge Capture in Nuclear Organizations-The Value of Explicit Knowledge, Tues. 3:30 p.m. - 5:00 p.m.
Selected Learning from the 2013 Conference on Nuclear Training and Education, Wed. 10:30 a.m. - 12:00 p.m.

Long-Term Operations

Digital I&C System Modernization and Licensing, Mon. 10:30 a.m. - 12:00 p.m.
Future Nuclear Workforce - Who- What- When- Where?, Mon. 1:30 p.m. - 3:00 p.m.
“The New” - Strategies for Using New Technologies in Operating Units - Part 1, Tues. 1:30 p.m. - 3:00 p.m.
U.S. Department of Energy Nuclear Plant I&C Research - Light-Water Reactor Sustainability (LWRS) Advanced I&C Pilot Projects, Mon. 3:30 p.m. - 5:00 p.m.
Wireless Technology Applications and Implementation in Nuclear Power Plants, Wed. 10:30 a.m. - 12:00 p.m.

Operations/Operations Training

Advanced Reactors, Mon. 10:30 a.m. - 12:00 p.m.
What Will Our Future Generation Challenges Be? Ultimate Teamwork in Design and Operations, Mon. 1:30 p.m. - 3:00 p.m.
“The New” - Strategies for Using New Technologies in Operating Units - Part 1, Tues. 1:30 p.m. - 3:00 p.m.
Next Generation Control Rooms - Impact on the Life on an Operator, Mon. 3:30 p.m. - 5:00 p.m.
Operating Experience (O.E.) and What it Really Means, Tues. 10:30 a.m. - 12:00 p.m.
Effective Use of Crew Notebooks to Improve Performance, Tues. 1:30 p.m. - 3:00 p.m.
Operations Crew Performance Evaluations and Industry Trends, Tues. 3:30 p.m. - 5:00 p.m.
Selected Learning from the 2013 Conference on Nuclear Training and Education, Wed. 10:30 a.m. - 12:00 p.m.

Maintenance

2012 & 2013 Work Management & Maintenance Overall Performance Summary, Mon. 10:30 a.m. - 12:00 p.m.
The Trouble with Cranes or what your Cranes Wish your Maintenance Personnel Knew, Mon. 10:30 a.m. - 12:00 p.m.

“Learn How Foreign Material Intrusion Events Cost, and How to Avoid Them”, Mon. 3:30 p.m. - 5:00 p.m.
Our Future (Electronic Work Packages) and Radio-frequency Identification (RFID), Mon. 3:30 p.m. - 5:00 p.m.
Operating Experience (O.E.) and What it Really Means, Tues. 10:30 a.m. - 12:00 p.m.
Risk as it Applies to Maintenance and Work Management Including Fire-based PRA, Tues. 1:30 p.m. - 3:00 p.m.
“The Facts and Nothing but the Facts, the Truth Behind Drop Prevention,” Tues. 3:30 p.m. - 5:00 p.m.
New Approaches for Meeting Post-Fukushima Requirements, Wed. 10:30 a.m. - 12:00 p.m.
Non-Critical PM Optimization, Wed. 10:30 a.m. - 12:00 p.m.

New Reactors

Advanced Reactors, Mon. 10:30 a.m. - 12:00 p.m.
Future Nuclear Workforce - Who- What- When- Where?, Mon. 1:30 p.m. - 3:00 p.m.
Next Generation Control Rooms - Impact on the Life on an Operator, Mon. 3:30 p.m. - 5:00 p.m.
Lessons Learned - COL Plus 18 Months, Mon. 3:30 p.m. - 5:00 p.m.
Small Modular Reactor (SMR) Licensing- What's Next?, Tues. 10:30 a.m. - 12:00 p.m.
State of the Renaissance, Tues. 1:30 p.m. - 3:00 p.m.

Performance Improvement

Safety Culture, Mon. 10:30 a.m. - 12:00 p.m.
Compliance with Performance Improvement, Mon. 1:30 p.m. - 3:00 p.m.
PI Effectiveness, Mon. 3:30 p.m. - 5:00 p.m.
Trending, Tues. 1:30 p.m. - 3:00 p.m.
Root Cause Analysis/Corrective Action Program, Tues. 3:30 p.m. - 5:00 p.m.
Conference Learnings/Feedback/Next Year's Recommendations, Wed. 10:30 a.m. - 12:00 p.m.

Equipment Innovation and Supply

The Old- Strategies for Obtaining or Maintaining Old Equipment, Mon. 10:30 a.m. - 12:00 p.m.
“The New” - Strategies for Using New Technologies in Operating Units - Part 1, Mon. 1:30 p.m. - 3:00 p.m.
“The New” - Strategies for Using New Technologies in Operating Units - Part 2, Mon. 3:30 p.m. - 5:00 p.m.
Post-Fukushima Equipment Initiatives, Tues. 10:30 a.m. - 12:00 p.m.
Fleet Perspective on Equipment Procurement, Tues. 1:30 p.m. - 3:00 p.m.
Equipment Innovations in New Nuclear Designs, Tues. 3:30 p.m. - 5:00 p.m.
Fraudulent Parts and Commercial Grade Dedication, Wed. 10:30 a.m. - 12:00 p.m.

Regulatory Relations/Oversight

Fukushima Response - Tier 2 and 3 Recommendations, Mon. 10:30 a.m. - 12:00 p.m.
Lessons Learned - COL Plus 18 Months, Mon. 3:30 p.m. - 5:00 p.m.
Small Modular Reactor (SMR) Licensing- What's Next?, Tues. 10:30 a.m. - 12:00 p.m.
Cyber Security for Nuclear Power Plants: Regulatory Status and Lessons Learned, Tues. 1:30 p.m. - 3:00 p.m.
Fraudulent Parts and Commercial Grade Dedication, Wed. 10:30 a.m. - 12:00 p.m.

Risk Management

Current Topics for Risk Management, Mon. 10:30 a.m. - 12:00 p.m.
Lessons Learned from Fukushima Dai-ichi (Advancing the Risk Informed Approach to Decision Making), Mon. 1:30 p.m. - 3:00 p.m.
External Hazard Risk Assessment, Mon. 3:30 p.m. - 5:00 p.m.
NFPA 805, SDP, and Other Risk-Informed Issues Resolution, Tues. 10:30 a.m. - 12:00 p.m.
Risk as it Applies to Maintenance and Work Management Including Fire-based PRA, Tues. 1:30 p.m. - 3:00 p.m.

Work Management

2012 & 2013 Work Management & Maintenance Overall Performance Summary, Mon. 10:30 a.m. - 12:00 p.m.
Industry Scram Analysis and Reduction Efforts Focused on Maintenance and Work Management Contribution to Scrams, Mon. 1:30 p.m. - 3:00 p.m.
Our Future (Electronic Work Packages) and Radio-frequency Identification (RFID), Mon. 3:30 p.m. - 5:00 p.m.
Use of a Deep Dives and Tiger / High Impact Teams (HIT) to Significantly Improve Work Management, Tues. 10:30 a.m. - 12:00 p.m.
Risk as it Applies to Maintenance and Work Management Including Fire-based PRA, Tues. 1:30 p.m. - 3:00 p.m.
FEG Based Credible Long Term Planning, How to do More with Less, Tues. 3:30 p.m. - 5:00 p.m.
Non-Critical PM Optimization, Wed. 10:30 a.m. - 12:00 p.m.

Detailed Conference Schedule: Monday

MONDAY, AUGUST 12, 2013 7:30 A.M. - 8:30 A.M.
Continental Breakfast in the Vendor Technology Expo

MONDAY MORNING PUBLIC SESSION

MONDAY, AUGUST 12, 2013 8:30 A.M. - 10:00 A.M.

Opening Plenary

Nuclear Power – Teaming for the Future

Session Chair: Ed Halpin (*Senior Vice President and Chief Nuclear Officer, Pacific Gas & Electric Company*)

Regency Ballroom 1 / 2

Keynote Speakers:

- Donald Hoffman (*ANS President, President and CEO, EXCEL SERVICES CORPORATION*)
- Rodger Dean Duncan (*Author and Business Consultant*)
Rodger is author of the internationally best selling book: *Change-friendly Leadership: How to Transform Good Intentions into Great Performance*, (each attendee will receive a copy of his book)
- Commissioner William C. Ostendorff (*Commissioner, NRC*)

MONDAY, AUGUST 12, 2013 10:00 A.M. - 10:30 A.M.

Mid-Morning Refreshment Break in the Vendor Technology Expo

Sponsored by Tennessee Valley Authority

MONDAY MORNING TECHNICAL SESSIONS

MONDAY, AUGUST 12, 2013 10:30 A.M. - 12:00 P.M.

Cybersecurity/Digital I&C

Long Term Operation

Digital I&C System Modernization and Licensing

Session Organizers: John Thorp (*NRC*), Scott Patterson (*DCPP*)

Diplomat 1

This session will address recent efforts to modernize nuclear power plant I&C systems. Current modernization activities designed to implement plant safety systems based on digital technology will be described. In addition, regulatory requirements for safety-related digital I&C systems will be discussed along with ongoing review activities. In particular, the pilot application of the NRC DI&C-ISG-06 will be addressed.

Speakers:

- John Thorp (*NRC*)
"ISG-06 Challenges and Lessons Learned—Update"
- Ken Schrader (*DCPP*)
"Diablo Canyon ISG-06 Licensing Experience for a Safety Related Digital Upgrade"
- John Hefler, PE (*Altran Solutions*)
"Diversity and Defense-in-Depth Considerations for the Diablo Canyon PPS Replacement"

Engineering

New Reactors

Operations/Operations Training

Advanced Reactors

Session Organizer: Steve Coppock, (*APS*)

Diplomat 3

The new generation nuclear stations promise simplified processes for licensing, design, construction, and operation. This session will focus on lessons learned and challenges around the design and operator training for the new, advanced, reactors.

Speaker:

- Dr. Tom Sanders (*Savannah River National Laboratory*)
"Moving Up the Energy Ladder"
- Bill Altic (*Westinghouse*)
"New Plant Operator Training"

Executive

Current State of the Industry

Session Organizers: Richard Cole (*R C Consulting*), Don Eggett (*AES*), Greg Boerschig (*TVA*)

Atlantic 1

The Monday morning Executive session will focus on the current state of the industry from the regulatory performance and sponsored industry technology perspectives. Michael Johnson, the NRC Deputy Executive Director for Reactor and Preparedness Programs, will provide a perspective on current industry performance and areas for focus on improvements. Nuclear Energy Institute Senior VP and CNO, Anthony Pietrangolo, will provide an update on the current discussions on cumulative effects of regulatory process changes and the focus for a plan that integrates actions and improvements in a safety-focused manner. An Executive from INPO will discuss the cumulative effect of internal and external influences on the nuclear industry.

Speakers:

- Michael Johnson (*Deputy Executive Director for Reactor and Preparedness Programs*)
- Anthony R. Pietrangolo (*NEI Senior Vice President and Chief Nuclear Officer*)
- INPO Executive, TBD

Knowledge Management/Workforce Issues

Succession Planning

Session Organizer: David Heler (*Palo Verde Human Resources Program Manager, Palo Verde Nuclear Generating Station*)

Diplomat 4

The latest revision of INPO Performance Objectives and Criteria contains the definition of a management System and cites Succession Planning as a specific example. This session will provide case studies and insights concerning high performance succession planning systems.

Speakers:

- Melissa Lungaretti, (*Manager, Palo Verde Human Resources*)
"Succession Planning Using A Modified 9-Box Approach"

Detailed Conference Schedule: Monday

MONDAY MORNING (CONT.)

- Karen Greig, (VP Human Resources Operations Exelon Generation)
“Talent Management- The Exelon Approach”
- Kelly Tvetter, (HR Manager NextEra Energy, Inc)
“NextEra Succession Planning Approach”

Maintenance

The Trouble with Cranes or what your Cranes Wish your Maintenance Personnel Knew

Session Organizer: Richard F Carpenter Jr, (PPL Susquehanna)

Room 212/213

This session will demonstrate the reasons why and what cranes really need to be available when called upon. There will give a review of several crane issues that have surfaced, including the incident at ANO this past March.

Speakers:

- Richard F Carpenter Jr. (PPL Susquehanna)
- Mr. Grant B. Levensood (American Crane Project Manager Nuclear Group)
- Mr. Frank Yurich (American Crane Vice-President, Quality and Improvement)

Maintenance

Work Management

2012 & 2013 Work Management & Maintenance Overall Performance Summary

Session Organizer: Pete Arthur (INPO)

Atlantic 3

This session will start with INPO discussing a review of 2012 and 2013 industry performance relative to Work Management and Maintenance. The session will also discuss recent Areas for Improvement along with a review of recent industry strengths and beneficial practices. Additionally, a review of 2013 Focus Areas will be reviewed and a discussion of the new Performance Objectives and Criteria used to evaluate power plants.

Round table discussion

Speakers:

- Pete Arthur (INPO)
- Bob Peters (INPO)
“What INPO is seeing in the Industry”

Performance Improvement

Safety Culture

Diplomat 5

Changes are occurring with the NRC and Utility Safety Culture assessment: new terminology, regulatory inspection, and advanced perspectives.

New Plant Operator Training” Equipment Innovation & Supply

The Old - Strategies for Obtaining or Maintaining Old Equipment

Session Organizer: Greg Keller (AZZ | NLI)

Diplomat 2

Old equipment is difficult to obtain and also difficult to maintain if spare parts are unavailable. This session highlights how plants and suppliers deal with equipment obsolescence using methods such as reverse engineering, CGD, etc., to continue using old or original equipment.

Speakers:

- Greg Keller (AZZ | NLI)
- Heiner Dornburg (Areva)
- Fritz Strydom (AZZ | WSI)

Regulatory Relations/Oversight

Fukushima Response - Tier 2 and 3 Recommendations

Session Organizer: Gordon Arent (TVA)

Atlantic 2

After the Fukushima disaster the NRC convened a Near Term Task Force to evaluate the events surrounding the disaster to review NRC processes and regulations and make recommendations to strengthen NRC policy. This session will explore the Tier 2 and 3 recommendations of the NRC's Near Term Task Force, to include actions underway, future plans, and possible problems. The forum will also be used to status and discuss any Tier 1 lessons learned.

Speakers:

- Jim Riley (NEI)
- Dave Skeen (USNRC)
- Jeff Taylor (Westinghouse)

Risk Management

Current Topics for Risk Management

Session Organizer: Anil Julka (NextEra Energy)

Room 214

Session will examine the challenges and benefits of risk informed initiatives after the issuance of RG 1.200 rev 2. Lessons learned from risk informed applications will be shared from regulatory and utility perspectives. These include challenges to new risk informed applications as well as impact of Fukushima on use of external events.

Speakers:

- Joseph Giitter (NRC)
“Why RG 1.200 came into existence”
- Rick Grantom (STPEG)
“Benefits of RG 1.200”
- Don Vanover (Exelon)
“Impact on applications Utility perspective”
- James Liming (STARS, Vice President ABS)
“Lessons learned from RI-SFCP”
- Biff Bradley (NEI)
“Impact of RG 1.200 and Future impact, an NEI perspective”

Detailed Conference Schedule: Monday

MONDAY, AUGUST 12, 2013 12:00 P.M. - 1:30 P.M.

Walk-Around Luncheon in the Vendor Technology Expo

Sponsored by Westinghouse Electric Company

MONDAY AFTERNOON TECHNICAL SESSIONS

MONDAY, AUGUST 12, 2013 1:30 P.M. - 3:00 P.M.

Cybersecurity/Digital I&C

The Critical Role of Human Factors Engineering in Operating and New Plant Control Rooms

Session Organizer: Joseph Naser (EPRI)

Diplomat 1

Human factors engineering (HFE) plays a critical role in control room and human-system interface designs for safe and reliable operation. Utilities and suppliers have human factors responsibilities including interactions between them for changes in operating plants and for new plant designs. This session will discuss guidance and demonstration activities to support proper HFE.

Speakers:

- Joseph Naser (EPRI)
“Human Factors Engineering – Critical for Safe and Efficient Operation”
- Matt Gibson (Duke Energy)
“Human Factors in Control Room Upgrades”
- Michael Platt (Lockheed Martin)
“Incorporating Tablet-based Technologies into Nuclear Training”

Engineering

Operations/Operations Training

What Will Our Future Generation Challenges Be? Ultimate Teamwork in Design and Operations

Session Organizer: Steve Coppock (APS)

Diplomat 4

As renewable energy sources are coming on-line and natural gas prices are impacting the mix of power sources that are dispatched to the grid, nuclear stations face the real challenge of being asked to operate in a reduced power or load following mode. In this session we will discuss the operating experience of nuclear stations that have been operated at reduced power or a load following mode of operation.

Speakers:

- Janice Frazier-Hampton (Pacific Gas and Electric)
“The challenges of Integrating Intermittent Renewables onto the Grid”
- Bob McFetridge (Westinghouse Electric Company)
“PWR OEM Overview of Load Follow and Reduced Power Impacts on NSSS, Fuel and Balance of Plant”
- Brad Sawatzke (Energy Northwest)
“Economic Dispatch Challenges”

Executive

U.S. Nuclear Strategy and its Future

Session Organizers: Richard Cole (R C Consulting), Don Eggett (AES), and Greg Boerschig (TVA)

Atlantic 1

The first Monday afternoon Executive session will provide a forum for discussion on the future of the nuclear industry. Rafael Flores, Senior Vice President and Chief Nuclear Officer of Luminant, will provide his perspective on the role of leadership in the future of the nuclear industry. Amir Shahkarami, CEO Exelon Nuclear Partners, will present his experience with international partnerships and strategic resourcing. The session will end with a presentation on how the industry is developing the leaders that will take us into the future, led by Dr. Mary Jo Rogers, the author of “Nuclear Energy Leadership - Lessons Learned from US Operations.”

Speakers:

- Rafael Flores (Luminant)
- Amir Shahkarami (Exelon)
- Dr. Mary Jo Rogers (Strategic Talent Solutions)

Knowledge Management/Workforce Issues

Long Term Operation

New Reactors

Future Nuclear Workforce- Who-What-When-Where?

Session Organizer: Greg Halnon (First Energy)

Diplomat 3

This session will provide actual and speculative information on where the future workforce will come from. What will be the fabric of the new generation of workers and how will they redefine the work ethic that got nuclear energy where it is today? What skill-sets will be required and how will they be trained are just a few of the topics that will be explored.

Speakers:

- Ross Snuggerud (NuScale)
- Mike Sontag (mPower)
- Bill Altic (Westinghouse)
- Lee M. Robinson (FENOC, NA-YGN)

Maintenance

“Learn How Foreign Material Intrusion Events Cost, and How to Avoid Them”

Room 214

This presentation presents a comprehensive answer to the problems caused by Foreign Material Intrusion and how to avoid them.

Speaker

- Richard Canziani (INPO)
“Year in Review”

Detailed Conference Schedule: Monday

MONDAY AFTERNOON (CONT.)

Work Management

Industry Scram Analysis and Reduction Efforts Focused on Maintenance and Work Management Contribution to Scrams

Session Organizer: Pete Arthur (INPO)

Atlantic 3

This session starts with a presentation by INPO with the current trends in scrams, but with a focus on how Maintenance and Work Management currently contribute to this trend and better yet, how to reduce this contribution. Participants will leave this session with the actual numbers and causes for scrams and specific actions they can take to minimize these threats.

Round table discussion of Practices Plants are using to Eliminate Scrams including Exelon OPCC

Speakers:

- Dan Glassic (INPO)

“What the Current Scram Analysis Means to Us”

Performance Improvement

Compliance With Performance Improvement

Diplomat 5

NRC findings and closeout inspection requires broad corrective action plans which continues to evolve. This includes internal company assessors and management expectations.

Long Term Operation

Equipment Innovation and Supply

“The New” - Strategies for Using New Technologies in Operating Units – Part 1

Session Organizer: Greg Keller (AZZ | NLI)

Diplomat 2

Advancements in equipment technologies make equipment less expensive, more reliable, more efficient, etc. But introducing new equipment types to an operating unit has its challenges. This session looks at some new technologies and how they are qualified for use in nuclear plants.

Risk Management

Lessons Learned from Fukushima Dai-ichi (Advancing the Risk Informed Approach to Decision Making)

Session Organizer: Jim Chapman (Sciencetech)

Atlantic 2

Session will examine advancing the use of PRA in a risk informed framework to support improved decisions making. Direct and indirect lessons learned from the accident at Fukushima Dai-ichi and insights from other risk informed initiatives including fire protection will be addressed by a diverse group of Industry experts.

Speakers:

- Jim Chapman (Sciencetech Curtiss Wright Flow Control)
- Biff Bradley (NEI)
- John Weglian (First Energy Nuclear Operating Company)
- Amir Afzali (Southern Nuclear Operating Company)
- Joe Gitter (NRC)

MONDAY, AUGUST 12, 2013 3:00 P.M. - 3:30 P.M.

Refreshment Break in the Vendor Technology Expo

Sponsored by Entergy Nuclear

MONDAY AFTERNOON TECHNICAL SESSIONS

MONDAY, AUGUST 12, 2013 3:30 P.M. -5:00 P.M.

Cybersecurity/Digital I&C

Long Term Operation

U.S. Department of Energy Nuclear Plant I&C Research - Light-Water Reactor Sustainability (LWRS) Advanced I&C Pilot Projects

Session Organizers: Ken Thomas (INL), Bruce Hallbert (INL)

Diplomat 1

The DOE LWRS and EPRI LTO programs are engaged in collaborative pilot projects regarding advanced I&C and control room technologies at existing nuclear plants. This session provides for discussion of these pilot projects.

Speakers:

- Ken Thomas (INL)
“Advanced Instrumentation, Information, and Control Systems: Utility Pilot Projects”
- Richard Rusaw (EPRI)
“On-Line Monitoring for Critical Components”
- Johanna Oxstrand (INL)
“Computer-Based Procedures for Nuclear Power Plants”

MONDAY AFTERNOON (CONT.)

Engineering

Regulatory Impacts/Initiatives, Near Term Implications

Session organizer: Keith Mills

Diplomat 4

This is the first of a two part session that will focus on new/emerging regulatory issues that face our industry and areas that have longer term implications. Each of the topics will be presented in a fashion to explore areas where industry teamwork has been effective and areas where future opportunities exist.

Speakers:

- Nick Pappas (*STARS NEI Representative*)
“FLEX, RRC, Nuclear Industry and NEI”
- Pat Donahue (*Entergy Services, Inc.*)
“U.S. EPA Clear Water Act 316(b) Rule”

Operations/Operations Training

Engineering

New Reactors

Next Generation Control Rooms - Impact on the Life on an Operator

Session Organizer: Jordan Gills

Atlantic 2

Most plants have completed or are planning the transition from analog dials, buttons, and switches in their control rooms to next-generation digital controls. Most operators have seen the wide panel LCD displays, quad panel and dual panel work stations, etc. We will discuss the impact that these will have on the operator both in terms of control and staffing.

Speakers:

- Carl Markert (*Director of Engineering and Operations, NuScale Power*)
- Bill Altic (*AP1000 Operations Instructor, Westinghouse*)

Executive

Industry Expansion - Construction and Modernization

Session Organizers: Greg Boerschig (*TVA*), Richard Cole (*R C Consulting*), Don Eggett (*AES*)

Atlantic 1

Several utilities are expanding their nuclear fleets. The second Executive session on Monday will focus on providing utility Executive's perspectives on why this has become their economic business model, and the status of such current initiatives. Ample time will be provided for attendees to ask questions and gain insight into the near future of the nuclear industry.

Speakers:

- Gordon Arent (*TVA, Senior Manager, Watts Bar 2 Licensing*)
- Dan Stout (*Senior Manager for SMR Technology, TVA, SMR*)
- Brad Adams (*Vice President, Fleet Operations, Southern Co., Vogtle 3&4*)

New Reactors

Regulatory Relations/Oversight

Lessons Learned - COL Plus 18 Months

Session Organizer: Clint Medlock (*Southern*)

Diplomat 3

This session explores the lessons learned from the ongoing construction at Southern Company's Vogtle Unit 3 and 4 and Summer Units 2 and 3; as well as of other construction projects around the world. Additionally, other lessons following the issuance of the Combine Operating/Construction License dealing with fabrication, construction, and quality assurance will be discussed with a panel of involved experts. This will be applicable to Part 52 and Part 50 projects giving a broad audience to the lessons learned early in the projects.

Speakers:

- Alan Torres (*SCANA*)
- Larry Erin (*PMP Westinghouse*)
- Amy Aughtman (*Southern*)
- Jim Luehman (*USNRC*)

Maintenance

Work Management

Our Future (Electronic Work Packages) and Radio-frequency Identification (RFID)

Session Chair: Rich Carpenter (*PPL*)

Atlantic 3

This session includes an exciting look at the future of electronic work packages and the work EPRI and pilot stations are doing to pilot this significant change in the way we develop and use work packages and other uses for RFID. Participants in this session will see the future today from EPRI and hear how the pilot stations are doing. RFID is the technology that keeps on giving. RFID has many purposes, but as an example, enables you as a warehouse person to complete an inventory of the warehouse in minutes instead of days. Participants will see what the future looks like using this exciting technology.

Round table discussion

Speakers:

- Lee Rogers (*EPRI*)
“The Future of Work Packages (RFID)”
- Rich Carpenter (*PPL*)
- Mr. Rick Raber (*Vice President of Northern Apex*)
“PPL Experience with RFID”
- Preston Pratt (*SQN*)
“SQN Actions to go Wireless”

Detailed Conference Schedule: Monday/Tuesday

MONDAY AFTERNOON (CONT.)

Performance Improvement

PI Effectiveness

Diplomat 5

Engaging management and support to increase return on investments with performance improvement programs. Looking for newer and different ways to increase the effectiveness and efficiencies of nuclear organizations existing business models.

Equipment Innovation and Supply

“The New” - Strategies for Using New Long Term Operation Technologies in Operating Units – Part 2

Session Organizer: Bill Davidson

Diplomat 2

Advancements in equipment technologies make equipment less expensive, more reliable, more efficient, etc. But introducing new equipment types to an operating unit has its challenges. This session looks at some new technologies and how they are qualified for use in nuclear plants.

Speakers:

- Dirk Band (SPX)
- Mark Tannenbaum (EPRI)

Risk Management

External Hazard Risk Assessment

Session Organizer: Bijan Najafi (SAIC)

Room 214

Session will address seismic, flooding and other external hazards risk development and applications in light of the Reg. Guide 1.200 and Fukushima related activities.

TUESDAY, AUGUST 13, 2013 7:00 A.M. - 8:30 A.M.

Sunrise Breakfast

Sponsored by Sargent & Lundy LLC

TUESDAY MORNING PUBLIC SESSION

TUESDAY, AUGUST 13, 2013 8:30 A.M. - 10:00 A.M.

Plenary Session

Nuclear Power – Teaming for the Future

Session Chair: Rafael Flores (Chief Nuclear Officer, Luminant)

Regency Ballroom 1 / 2

Speakers:

- John Conway (Senior Vice President of Energy Supply, Pacific Gas and Electric Company)
- John E. Kelly, Ph.D., (Deputy Assistant Secretary for Nuclear Reactor Technologies, DOE)

TUESDAY, AUGUST 13, 2013 10:00 AM. - 10:30 A.M.

Refreshment Break in the Vendor Technology Expo

Sponsored by ANS CNSTI

TUESDAY MORNING TECHNICAL SESSIONS

TUESDAY, AUGUST 13, 2013 10:30 A.M. - 12:00 P.M.

Cybersecurity/Digital I&C

U.S. Department of Energy Nuclear Plant I&C Research - Nuclear Energy Enabling Technologies (NEET) Advanced Sensors and Instrumentation

Session Organizers: Suibel Schuppner (DOE), Bruce Hallbert (INL)

Diplomat 1

The DOE NEET Advanced Sensors and Instrumentation research addresses crosscutting issues that affect existing, new, and advanced reactors. This session provides an overview of the research program and highlights particular projects that are relevant to near-term nuclear plant application.

Speakers:

- Ken Thomas (INL), Richard Wood (ORNL)
“Digital Technology Qualification: Expanded Use of Digital Field Devices and Common-Cause Failure (CCF) Mitigation”
- Dwight Clayton (ORNL)
“Power Harvesting: Self-Powering Sensor Networks”
- Pradeep Ramuhalli (PNNL)
“Advanced Algorithms for Online Calibration Monitoring of Transmitters and Instrumentation”
- Rick Vilim (ANL)
“Monitoring for Sensor Degradation”

TUESDAY MORNING (CONT.)

Engineering

Engineering Regulatory Initiatives/Impacts - Longer Term Issues

Session Organizer: Keith Mills

Atlantic 2

This session will focus on new/emerging regulatory issues that face our industry and areas that have longer term implications. Each of the topics will be presented in a fashion to explore areas where industry teamwork has been effective and areas where future opportunities exist.

Speakers:

- Paul Bemis (*Pacific Gas and Electric*)
“*NFPA 805 Industry Regulatory Experience*”
- Rick Grantom (STP Nuclear Nuclear Operating Company)
“*Risk Informed GSI-191 Status and Future Possibilities*”

Executive

Industry Lessons Learned

Session Organizers: Richard Cole (*R C Consulting*), Don Eggett (*AES*), Greg Boerschig (*TVA*)

Atlantic 1

Several utilities have dealt with challenges in recent years. This session will focus on utility executives' perspectives on how they have dealt with these challenges, and recommendations for addressing similar strategic issues in the future. Presenters will include Robert Duncan, Senior VP of Operations at Duke, who will discuss the recent Duke and Progress Energy merger, and James Becker, President of STARS Alliance, to discuss the unique opportunities of the diversified fleet he leads.

Speakers:

- Robert Duncan (*Duke*)
- James Becker (*STARS Alliance*)

Knowledge Management/Workforce Issues

Human Capital Impact on Organizations - The People Health Committee Concept

Session Organizer: Tony Marco (*Director, Palo Verde Human Resources, APS*)

Diplomat 4

This session will introduce a new concept to managing the impact of human impact on organizations by use of a “People Health Committee” using an approach similar to the management of equipment reliability by using a Plant Health Committee.

Speakers:

- Tony Marco (*Director, Palo Verde Human Resources, APS*)
- Maria Lacial, (*Vice President, Operations Support*)
“*People Health Committee – An Operational Perspective on People Programs*”

Operations/Operations Training

Maintenance

Operating Experience (O.E.) and What it Really Means

Session Organizer: Rich Carpenter (*PPL*)

Diplomat 5

SOER 10-2 tells us that we must be a learning organization and this presentation tells the importance of being able to relate these experiences to all our personnel.

Speakers:

- Rich Carpenter (*PPL*)
- Randy F. Ebright (*AEP*)

New Reactors

Regulatory Relations/Oversight

Small Modular Reactor (SMR) Licensing - What's Next

Session Organizer: Gary Wolski (*Sciencetech*)

Diplomat 3

This session will discuss lessons learned under the 10 CFR Part 52 process and the implications related to future SMR projects. Issues, concerns and unique challenges/opportunities regarding policies and approaches will also be discussed.

Speakers:

- Vince Gilbert- introduction, (*EXCEL Services*)
- Dan Stout (*TVA*)
- Stephanie Coffin (*USNRC*)
- Ed Wallace (*NuScale*)
- Rich Carpenter (*PPL*)

Work Management

Use of a Deep Dives and Tiger / High Impact Teams (HIT) to Significantly Improve Work Management

Session Organizer: Pat Boyle (*Exelon*)

Atlantic 3

This session will include discussions by organizations that have mastered the deep dive process as a way to make significant improvement in Work Management through the use of small focused teams. The significant value from this session will be in understanding how others have been successful in driving change in organizations where there are so many other priorities that make change difficult.

- Pat Boyle (*Exelon*)
“*Using Deep Dives to Turn Plant Performance Around*”
- Pete Arthur (*INPO*)
“*Assist Visit Findings and General Themes*”
- Preston Pratt (*SQN*)
“*How to get Management's Attention to Change*”

Detailed Conference Schedule: Tuesday

TUESDAY MORNING (CONT.)

Equipment Innovation & Supply

Post-Fukushima Equipment Initiatives

Session Organizer: Colin Elcoate (VP Business Development, Power, SPX)

Diplomat 2

The session will look at solutions in response to insights from Fukushima Daiichi, this will cover defense-in-depth measures to compensate for potential failures, new equipment, and technologies able to handle the problems and issues that occurred such as Station Blackout (SBO) and flooding.

Speakers:

- Ranald Patrick (SPX)
- Jeff Taylor (Westinghouse)
- Gregg Schneider (GE Hitachi)

Risk Management

NFPA 805, SDP, and Other Risk-Informed Issues Resolution

Session Organizer: Harold Stiles

Room 214

Session will discuss lessons learned of the NFPA 805, industry Significance Determination Process issues, and other risk-informed applications in the nuclear power plants.

Speakers:

- Ricky Summit (RSC)
“An Approach for Evaluating Human Error During the Implementation of Alternate Safe Shutdown Procedures Following Main Control Room Abandonment”
- Harold Stiles (Duke)
“Operating Experience in the Use of Fire PRA for Significance Determination Process and Notice of Enforcement Discretion”
- Steve Meyer (Scientec)
“Defense in Depth and Safety Margin: Lessons Learned Blending Traditional and PRA-Informed Approaches in NFPA-805 using Fire PRA”
- Ray Dremel (Maracor)
“Managing Utility Resource Requirements For Significance Determination Process Evaluations”

TUESDAY, AUGUST 13, 2013 12:00 P.M. - 1:30 P.M.

Walk-Around Luncheon in the Vendor Technology Expo

TUESDAY AFTERNOON TECHNICAL SESSIONS

TUESDAY, AUGUST 13, 2013 1:30 P.M. - 3:00 P.M.

Cybersecurity/Digital I&C

U.S. Department of Energy Nuclear Plant I&C Research - Advanced Small Modular Reactor (AdvSMR) Instrumentation, Control, and Human-Machine Interface

Session Organizer: Richard Wood (ORNL)

Diplomat 1

The DOE AdvSMR Instrumentation, Control, and Human-Machine Interface research addresses high priority issues for SMRs arising from technology gaps and cost-effective operations and maintenance objectives. This session provides an overview of the research program and highlights particular projects that are relevant to near-term nuclear plant application.

Speakers:

- Charles Britton (ORNL)
“Johnson Noise Thermometry: A Self-Calibrating Temperature Measurement”
- Johanna Oxstrand (INL)
“Human-Automation Collaboration Considerations in Highly-Integrated Control Rooms”
- Jamie Coble (PNNL)
“Enhancement of Operational Risk Monitors Based on Equipment Condition Assessment”

Cybersecurity/Digital I & C

Regulatory Relations/Oversight

Cyber Security for Nuclear Power Plants: Regulatory Status and Lessons Learned

Session Organizers: Ted Quinn (Technical Resources), Gordon Arent (TVA)

Atlantic 2

This session addresses the current status of the NRC regulatory framework for cyber security as well as utility lessons learned in addressing these updated requirements. Since the NRC publication of Regulatory Guide 5.71, new inspection criteria have been issued to the utilities by the NRC, and a number of inspections have been conducted by the NRC to verify the adequacy of the actions implemented following 10 CFR 73.54 and Regulatory Guide 5.71. On the industry side, a lot of progress has been made in application of NEI 08-09 R6 and associated documents in implementing the cyber security program at each nuclear station. Speakers will address the latest information from the perspective of NRC, NEI, and industry in this fast changing area of nuclear regulation.

Speakers:

- Laura Snyder (TVA)
- Russell Felts (USNRC)
- Bill Gross (NEI)
- Nathan Faith (Exelon)

TUESDAY AFTERNOON (CONT.)

Knowledge Management/Workforce Issues

New Reactors

State of the Renaissance

Session Organizer: Greg Halnon (First Energy)

Diplomat 3

This session will refresh the term “nuclear renaissance” and put it in terms of today’s market. There was much excitement several years ago around new nuclear, is it still there? What challenges to new nuclear will we be seeing in the future? What happened to the momentum?

Speakers:

- Greg Halnon (FirstEnergy)
- Marylyn Kray (Exelon)
- Russ Bell (NEI)
- Lawrence Denny (Duke)
- Dr. Jay Khim (or his chief scientist) (Global Energy)

Equipment Innovation & Supply

Fleet Perspective on Equipment Procurement

Session Organizer: Michael Meko (Director, Generation Supply Chain, PG&E)

Diplomat 2

Panel discussion.

The general topic is how large utility and alliance fleets approach equipment decisions and procurements.

Panel Members:

- Alicia Freeman (Manager, Comanche Peak Supply Chain, Luminant)
- Terry Baker (Manager, Sourcing, Duke Energy)
- Craig Irish (VP, Sales and Marketing, AZZ-NLI)
- Kimberly Clark (Chief Commercial Officer, N.A., AREVA)

Operations/Operations Training

Effective Use of Crew Notebooks to Improve Performance

Session Organizer: Mike Spellman

Atlantic 1

Across the industry, Operations organizations have implemented the use of crew notebooks to track and improve operating crew performance. Many of these implementations have missed the mark. This session will evaluate and rework the content and use of crew notebooks to produce recommendations that will refocus the crew notebook on truly improving performance.

Panelists:

- Scotty Scott (Assistant Operation Manager, Duke Energy, Harris Nuclear Plant)
- James Priest (Shift Manager, PSEG, Hope Creek)
- Ford Crane (Shift Manager, Entergy Nuclear)
- John Twarog (Shift Manager, Entergy, Vermont Yankee)

Contributors:

- Ray Gomez (President/Owner, HOPE Consulting LLC)
- Alex McLellan (Shift Manager, PP&L, Susquehanna Nuclear Plant)
- C.B. (Charles) Morgan (Shift Manager, Constellation/Exelon, Calvert Cliffs)
- Robert (Rob) Rush (Shift Manager, Exelon, Clinton)

Maintenance

Work Management

Risk Management

Risk as it Applies to Maintenance and Work Management Including Fire-based PRA

Session Chair: Pat Boyle (Exelon)

Atlantic 3

This session will include a discussion of what the current issues are associated with the performance of operational risk assessments and the identification of mitigating strategies to ensure that risk is managed. Stations that are already doing well with risk assessments will present their solutions. This session will also include a discussion of the integration of Fire-based PRA (NUREG/CR-6850, EPRI TR-1011989) into our online risk programs. This is an important topic because all domestic nuclear stations will need to make this change by the end of the year. One of the focus areas in this session will be getting the risk mitigation strategies out of the books and into the hands of Maintenance and Work Management. The participants will leave this session with a new perspective on operational risk assessments and how to manage them.

Speakers:

- Brent Matherne (Duke)
“Lessons learned at implementing Fire PRA at Harris”
- Mark Utz (Exelon)
“The Impact of Fire PRA Pilots in Exelon - LaSalle & Oyster Creek”

Performance Improvement

Trending

Diplomat 5

What have we learned about trending performance improvement and effective means to identify and take action on revealing trends. How can we increase confidence of the organization and get management to invest in proactive versus reactive changes?

Detailed Conference Schedule: Tuesday

TUESDAY, AUGUST 13, 2013 3:00 P.M. - 3:30 P.M.
Refreshment Break in the Vendor Technology Expo

TUESDAY AFTERNOON TECHNICAL SESSIONS

TUESDAY, AUGUST 13, 2013 3:30 P.M. - 5:00 P.M.

Cybersecurity/Digital I&C

Electromagnetic Compatibility Issues with the Implementation of Digital and Wireless Equipment in Nuclear Power Plants

Session Organizers: Hash Hashemian (AMS), Chad Kiger (AMS)

Diplomat 1

This session addresses Electromagnetic Compatibility (EMC) issues with the use of digital equipment and wireless technologies in nuclear power plants. Digital upgrades and other advanced technologies are going to be essential for the continued reliable operation of nuclear power plants especially since plants are expected to operate for sixty years and beyond. EMC is critical to ensure that equipment can operate in the plant's electromagnetic environment. In order to properly address EMC, it must be an integral component throughout the entire equipment design and installation process. This includes ensuring that proper EMC requirements are a part of the design specifications by the nuclear utility, the design engineers understand and incorporate EMI mitigation into the equipment design and construction, the qualification testing follows appropriate testing methodologies, and the plant installation follows the industry recommendations and regulatory guidance with respect to EMC. Presentations will cover the aforementioned issues.

Speakers:

- Clint Carter (Luminant)
"Advanced Monitoring & Diagnostics: Experience at Luminant and the Benefits of Nuclear Industry"
- Dennis Symanski (EPRI)
"Update for EPRI Topical Report TR-102323 Revision 4 'Guidelines for Electromagnetic Compatibility'"
- Gregory Westphal (CENG)
"Analog to Digital Conversion of the Leak Detection System"
- Chad Kiger (AMS)
"Avoiding Heartaches during Qualification Testing by Designing Digital Systems with EMC in Mind"

Knowledge Management/Workforce Issues

Knowledge Capture in Nuclear Organizations-The Value of Explicit Knowledge

Session Organizer: Vince Gilbert (Chief Knowledge Officer, EXCEL Services Corporation)

Diplomat 4

This session offers an internal view into several large nuclear organizations to learn how they capture knowledge over extended periods of time to benefit their organization, customers and stakeholders. Multiple points of view will be featured including reactor design, regulation and research and development/plant support.

Speakers:

- Tom Boyce, (Chief, Regulatory Guidance Branch, US NRC)
"NRC Knowledge Capture Methods"
- Neil Wilmshurst, (Vice President Nuclear Sector, EPRI) – invited
"EPRI R&D and Knowledge Capture"
- Mike Corletti, (Engineering Director, New Plant Engineering, Westinghouse)
"Capturing Knowledge in Reactor Designs at Westinghouse"
- John Bendo, (Nuclear Energy Business Manager, ASME)
"The Role of Standards in Knowledge Capture"

Operations/Operations Training

Operations Crew Performance Evaluations and Industry Trends

Session Organizer: Joan Wieging (Energy)

Atlantic 1

This session is focused on crew performance evaluations results and industry trends. Exelon will be discussing learnings from the crew performance evaluations for their fleet; INPO will be discussing overall industry trends.

Speakers:

- Gregg Ludlam (Director, Fleet Training/CFAM, Exelon)
"Improving Operator Fundamental Performance"
- Phil Russell (Operation Manager, INPO)
"Operator Fundamentals - An Update"
- Cynthia DeVita-Cochrane (Director, Organizational/Human Capital Consulting Westwind Group)
"Improving Marginal Performing Operators with Full-Circumference Assessments (updated from Conte)"

Maintenance

"The Facts and Nothing but the Facts, the Truth Behind Drop Prevention"

Session Organizer: Rich Carpenter (PPL)

Diplomat 3

We work at height regularly, we are skilled at Personal Fall Protection for ourselves but what about the workers below, consider the formula "a 3 lb. hammer 30 foot drop = 1 Dead Worker. Here we try to stress the importance of hazard awareness from a different point of view.

Speakers:

- Rich Carpenter (PPL)

Detailed Conference Schedule: Tuesday/Wednesday

TUESDAY AFTERNOON (CONT.)

Work Management

FEG Based Credible Long Term Planning. How to do More with Less

Session Chair: Rich Carpenter (PPL)

Atlantic 3

“How to do More with Less” is the topic of many conversations in the nuclear industry. This session will focus on establishing a FEG based credible Long Term Plan and how to use that plan to eliminate churn in the Work Management, Maintenance and Supply Chain Processes. A highly successful implementation of the AP-928 Supply / Demand model will be a focus of cracking this nut. This session will provide solutions to help with backlog reduction.

- Preston Pratt (*SQN*)
“SQN Long Term Planning 2013 Initiative”
- Jon Anderson (*Anderson, Chavet & Anderson*)
“10 “Deals” to Improve Long Term Planning and Work Load Management Plant”
- Brent Jungman (*Amgen*)
“Long Term Planning at Callaway”
- Frank Bazyk (*CCNPP*)
- Joe Klecha (*SNC*)
“Making the Supply and Demand Model work”

Performance Improvement

Root Cause Analysis/Corrective Action Program

Diplomat 5

Keeping an organization engaged in corrective action program processes, being efficient, self-correcting poor implementation and performance results, and staffing with the right people.

Equipment Innovation & Supply

Equipment Innovations in New Nuclear Designs

Session Organizer: Scott Bailey, (NuScale Power LLC)

Diplomat 2

This session will discuss how a NSSS vendor for new nuclear design collaborates with nuclear equipment suppliers to bring cutting edge technology and equipment solutions to new nuclear designs. This session will highlight how specific equipment solutions will address longstanding operational issues such as obsolescence, maintainability, and spare parts.

Speakers:

- Scott Bailey, (*Vice President, Supply Chain, NuScale Power LLC*)
- Gregg Clarkson, (*President Rock Creek Technologies*)
- Gary Wolski, (*Vice President, Nuclear Group, Curtiss Wright Flow Control Company*)

TUESDAY, AUGUST 13, 2013 5:00 P.M. - 7:00 P.M.

Reception in the Vendor Technology Expo

Beer/Wine/Soft Drinks—Co-Sponsored by IBM, NGNP and Toshiba America Nuclear Energy Corporation

TUESDAY, AUGUST 13, 2013 7:30 P.M. - 10:30 P.M.

EXCEL SERVICES CORPORATION Evening Event

WEDNESDAY MORNING EVENT

WEDNESDAY, AUGUST 14, 2013 7:00 A.M. - 8:00 A.M.

Continental Breakfast in the Vendor Technology Expo

WEDNESDAY MORNING PUBLIC SESSION

WEDNESDAY, AUGUST 14, 2013 8:00 A.M. - 10:00 A.M.

Industry Awards Presentation and Plenary Session

Regency Ballroom 1 / 2

Nuclear Power – Teaming for the Future

Session Chair: James Becker (President, STARS Alliance LLC)

Speakers:

- Donald Hoffman (*ANS President, President and CEO, EXCEL SERVICES CORPORATION*)
- Marvin S. Fertel (*President and Chief Executive Officer, Nuclear Energy Institute NEI*)
- Robert L. Gambone (*Vice President, Plant Operations, INPO*)

Industry Awards Presentation:

The ANS 2013 Utility Leadership Award

David Heler, (*Palo Verde Manager of HR Programs*)

Mr. Heler has made significant contributions toward Strategic Workforce Planning and Knowledge Management processes that have benefited both the U.S. and International Nuclear Industry. His leadership at Arizona Public Service and Palo Verde Nuclear Generating Station have contributed to a significant partnership with Arizona community colleges for the training of utility workers. He played a major role in developing nuclear industry workforce staffing metrics and conceptualized initiatives that address the aging workforce and knowledge management. He is a key developer of essential elements of workforce planning along with a knowledge transfer and risk assessment model, both of which are being adapted by the IAEA for global use. He has served or is serving as a developer of the NEI Talent Task Force Staffing survey, and is a subject matter expert for the Center of Energy Workforce Development as well as a Committee Member for the Electric Utility – Human Resources Community of Practice.

Detailed Conference Schedule: Wednesday

WEDNESDAY MORNING (CONT.)

The ANS 2013 Utility Achievement Award

Exelon's Dresden Station

For demonstrating a long-term commitment to performance improvement and sustained excellent performance. Consistently for a decade Dresden Units 2 and 3 have consistently improved outage performance and capacity factors and have reliably sustained those improvements resulting in the site containing two highly rated units.

Walter H. Zinn Award

Recipient: Loyd A. Wright

Loyd Wright has dedicated his greater than 30-year career to activities that have supported the advancement of nuclear energy and nuclear science and technology. Loyd has been a leader in the American Nuclear Society for most of his career and has excelled in several leadership roles at the San Onofre Nuclear Plant.

Loyd has taken on new leadership responsibilities at the San Onofre Nuclear Plant and laid the foundation for future success.

Loyd was an integral part of continued improvement for the STARS Alliance License Renewal efforts. As a member of the STARS License Renewal oversight committee, Loyd volunteered to lead multiple self-assessments, demonstrating an ability to coordinate a culturally diverse group in a virtual environment in a highly effective manner.

Loyd's leadership allowed the team to function in a capacity that delivered high quality products in a timely manner. The products provided valuable insights to needed areas of improvement. The success of these improvements directly contributed to the success of the Callaway station License Renewal application process. Loyd also provided leadership for the alliance in supporting NRC interactions through development of interaction strategies and engagement plans.

Meritorious Performance in Operation

Oak Ridge National Laboratory High Flux Isotope Reactor

For significant improvement in reactor facility operations, plant maintenance and reliability as a neutron source for irradiation and scattering programs.

WEDNESDAY, AUGUST 14, 2013 10:00 A.M. - 10:30 A.M.

Refreshment Break

WEDNESDAY MORNING TECHNICAL SESSIONS

WEDNESDAY, AUGUST 14, 2013 10:30 A.M. - 12:00 P.M.

Cybersecurity/Digital I&C

Long Term Operation

Wireless Technology Applications and Implementations in Nuclear Power Plants

Session Organizer: Hash Hashemian (AMS), Chad Kiger (AMS)

Diplomat 1

This session addresses implementation of wireless technologies for equipment condition monitoring, voice and data communication, and process measurement. The nuclear power industry has been slow to adopt wireless technology; however, the compelling case for its use has led to several implementations in the areas of voice and data communications, health physics, equipment condition monitoring, and others. Furthermore, a number of research and development activities have been completed or are in process to validate the use of wireless technologies for nuclear power plants and address cyber security and interference issues. Presentations will cover implementation experiences as well as R&D results.

Speakers:

- H. M. Hashemian (AMS)
“Wireless Technologies in Nuclear Facilities: Are EMC and Cyber Security Show-Stoppers?”
- Michael Hoffman (Exelon)
“Wireless Infrastructure at Nuclear Power Plants; Perspectives from Exelon”
- Akbar Moarefy (PG&E)
“Vulnerability Assessment of Power Plant Equipment to Electromagnetic Interference from Wireless Devices”
- Mohammed Yousuf (Exelon)
“On-line Asset Condition Monitoring of Balance of Plant Equipment Using Wireless Technology”

Engineering

Industry Discussion, Engineering State of the Union

Session Organizer: Jeff Summy

Atlantic 1

Attendees at this session will have the opportunity to hear from representatives of several major industry organizations and the NRC on engineering trends. Participants will be able to engage panel members in discussion about emerging trends and challenges that engineering organizations face as we move into the future. Hear from the STARS Alliance, INPO and the NRC their perspective on the types of issues that the nuclear fleet is, and will be, challenged with in the future.

Speakers:

- Jack Cardigan (Arizona Public Service)
“Maintaining and Improving Engineering Effectiveness”
- Scot Greenlee (Exelon)
“The Quest for Engineering Excellence”
- Jenifer Uhle (NRC)
- Bob Gambrell (INPO)
“Engineering Performance and Leadership”

WEDNESDAY MORNING (CONT.)

Maintenance

New Approaches for Meeting Post-Fukushima Requirements

Session Chair: Rich Carpenter (PPL)

Diplomat 5

In response to the March 2011, Fukushima event, new requirements for mitigation strategies have been imposed on commercial power reactor. These mitigation strategies may require new approaches to engineering analyses. This session will explore approaches to meeting the new post-Fukushima requirements.

Speakers:

- Joe Prosachik (*Nine Mile Point*)
- Nathan Block (*Red Wolf Associates*)
- Amadeus Burger (*CEO of CSA Inc.*)

Executive

The 2013 UWC and The Way Forward for the 2014 UWC

Session Organizers: Richard Cole (*R C Consulting*), Don Eggett (*AES*), Greg Boerschig (*TVA*)

Diplomat 2

This session is co-hosted by the 2013 General Chair and the 2014 General Chair. Industry Executives and current and future track leaders should attend to discuss what went well during the 2013 UWC, such that the 2014 UWC can build on the success from the 2013 UWC.

Speakers:

- Raphael Flores (*2013 General Co-Chair*)
- Ed Halpin (*2013 General Co-Chair*)
- Jim Becker (*2013 Assistant General Chair*)

Knowledge Management/Workforce Issues

Operations/Operations Training

Selected Learning from the 2013 Conference on Nuclear Training and Education

Session Organizers: Mike Spellman and Vince Gilbert

Diplomat 3

Much of the work at the CONTE Conference applies specifically to Operations Training, Performance Evaluation and Work Force Issues. Among the lessons that will be shared are innovative evaluation and simulator based training methods, training program requirement changes post-Fukushima and cultural impacts to knowledge sharing.

Speakers:

- Majid Mirshah (*Sales and Marketing Director, Western Services Corp.*)
“Advances in the Delivery of Nuclear Power Plant Simulation (updated)”
- Robert Downing (*Career and Professional Development Newport News Shipbuilding Huntington Ingalls Industries*)
“Will They Tell You What They Know? – Culture Impacts Knowledge Sharing”
- Steven White (*Program Manager Director, Workforce Solutions GSE Systems, Inc.*)
“Fukushima’s Impact – Beyond the SAMGs and New Equipment Training”
- Jim Maddox (*Director, Emergency Response Development INPO*)
“Recommended Approach for Emergency Response Organization Training and Qualification, Post Fukushima”

Maintenance

Work Management

Non-Critical PM Optimization

Session Chair: Jon Anderson (*ACA Inc.*)

Atlantic 3

This session is going to dive deep into the current trend in the industry related to management of preventive maintenance on Non-critical Components. Turning over the management of these PMs has worked for some organizations, but not others. We will hear from some organizations that have this figured out and others that are still working to make it work. A significant tie to Work Management is being ready to take control of those Maintenance hours freed up by the elimination of low value preventive maintenance.

- Sam Stewart (*Entergy*)
“Taking on PMs on Non-critical Equipment at Entergy”
- Jon Anderson (*ACA Inc.*)
“Traps to Avoid in PMs on Non-critical Components”

Performance Improvement

Conference Learnings/Feedback/Next Year’s Recommendations

Diplomat 4

Feedback session on learnings, ideas, and challenges from other track sessions, and requests for next year’s agenda.

Equipment Innovation and Supply

Regulatory Relations/Oversight

Fraudulent Parts and Commercial Grade Dedication

Session Organizer: Gordon Arent (TVA)

Atlantic 2

This track will discuss two specific issues facing supply chains and the ability to procure safety related parts. Specifically, the International Nuclear Industry has recently experienced issues with fraudulent and counterfeit parts. Additionally, lessons learned from recent NRC inspections regarding commercial grade dedication programs will be discussed along with the current status of rulemaking related to 10 CFR Part 21.

Speakers:

- Jim Luehman (USNRC)
- Russ Bell (NEI)
- Bhavesh Patel (Duke)
- Mark Tannenbaum (EPRI)

WEDNESDAY, AUGUST 14, 2013 12:00 P.M. - 1:30 P.M.

Conference Luncheon

Atlantic Ballroom 3



ANS National Meeting

2013 Winter Meeting and Technology Expo



Join us in DC!

November 10-14, 2013
Omni Shoreham Hotel

Program Highlights

- ★ 75 Years of Fission
- ★ Storm the Hill
- ★ Non-Proliferation: Future Vision
- ★ The SMR Wave
- ★ Technical Risk Management

75 YEARS
NUCLEAR
FISSION



REGISTER TODAY @ ANS.ORG

Professional Development Workshop

ANS Professional Development Workshop- Root Cause Analysis for Safety Culture and Human Performance Improvement

Thursday, August 15, 2013

8:00 a.m.-4:00 p.m.

Atlantic Ballroom 1/2

Workshop Organizer and Chief Instructor :

Dr. Bill Corcoran, President, Nuclear Safety Review
Concepts, Windsor CT 860-285-8779
firebird.one@alum.mit.edu

Co- instructor and Co-developer :

Mr. Dick Swanson, PE, President, Performance
Management Initiatives, Inc., St. Joseph, MI
269-428-7447 RNS@PMI-inc.com

Materials provided: 1) Hard copy of PowerPoint™
Slide Show for note taking, 2) PowerPoint file (PPT) of
slideshow for use in cascade training in attendees'
organizations, 3) Portable document format (Adobe
PDF) file of *The Phoenix Handbook*, the ultimate
investigation manual for finding profit improvement in
adverse experience (a \$150.00 value), 4) Portable
document format (Adobe PDF) file of an actual Root
Cause Analysis Report.

Workshop attendance is limited to the first thirty (30)
paid applicants to provide for collegial discussion and
individual attention.

Who Should Attend:

This workshop is for professionals whose current or
near-term future duties involve:

- Sponsoring or conducting root cause analyses of
adverse events or their precursors
- Training event investigation teams
- Assessing the effectiveness of event investigations
- Managing the outcomes of event investigations
- Managing or assessing corrective action programs
- Defending the regulatory aspects of event
investigations
- Safety Conscious Work Environment
- Employee Concerns Program

Who Should not Attend:

This workshop is **not** for people who want to continue
thinking that:

- Event investigation is a well-defined science about
which nothing new can be learned.
- There is a single right way to do root cause
analysis.
- For every consequential event there is one single
root cause.
- Event consequences are not controlled by
business decisions.
- Event investigation should be done mainly to
satisfy outside agencies.

What Will Happen in Class:

During this workshop we will journey with the instructor
through a safety culture and human performance-
oriented approach to event investigation organizational
learning.

We will take away immediately usable tools that have
been applied successfully in the contexts of nuclear
power generation, fossil power generation, electric
transmission and distribution, natural gas distribution,
site remediation, manufacturing, offshore oil, and
petrochemicals.

We will participate in hands-on individual and group
work in the actual application of bottom-line customer
focused techniques that take full advantage of
investigators' abilities to do out-of-the-box thinking.

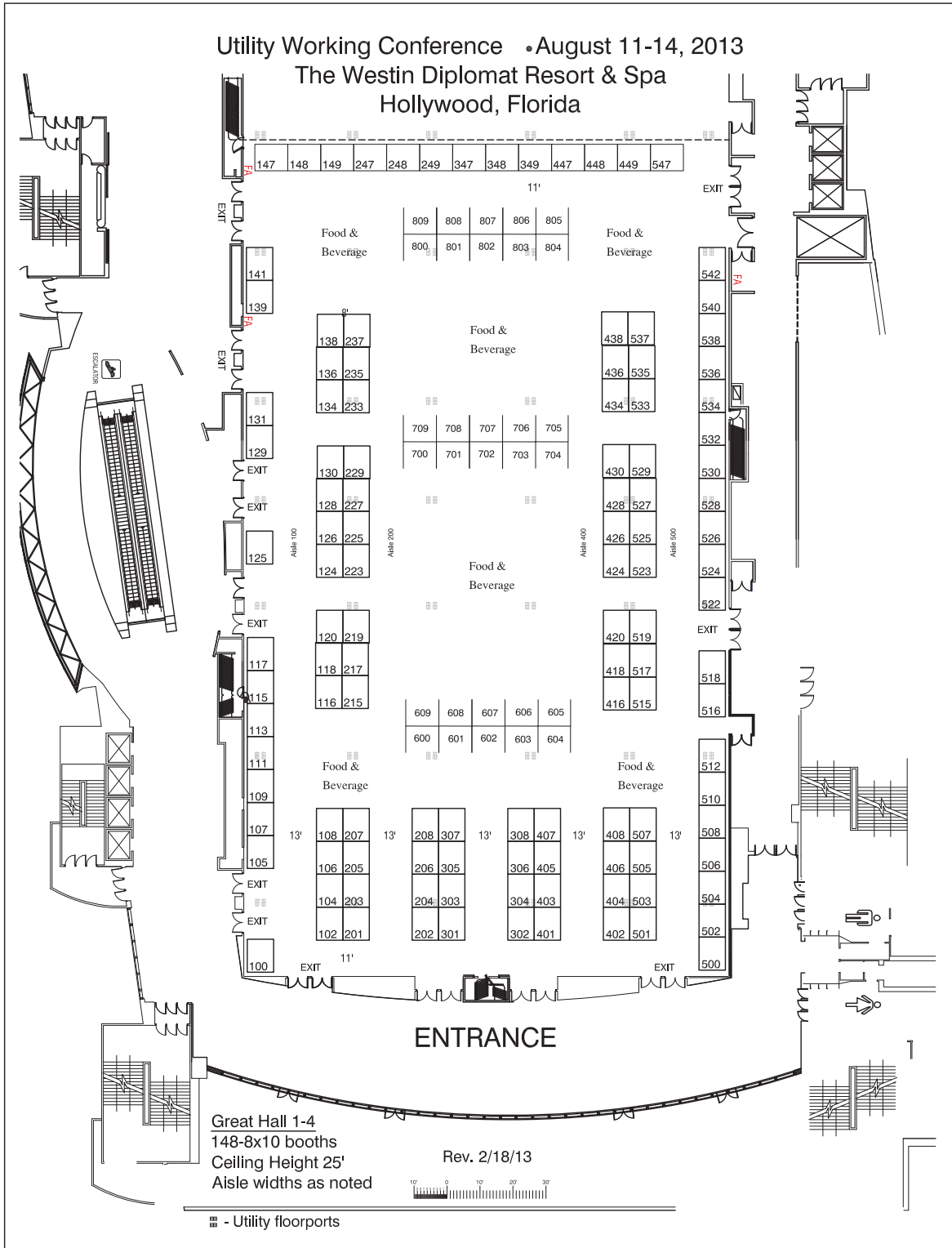
This workshop will furnish the attendees with a
spectrum of immediately applicable action items that
will be in full compliance with most existing corrective
action programs. Participant-instructor interaction will
emphasize the modeling and emulation of proven
investigator and management behaviors.

Workshop topics will include:

- Business Assessment of RCA Reports
- Regulatory Assessment of RCA Reports
- Safety Culture in Root Cause Analysis
- Using Event Investigation as a Window into the
Culture
- Standard Approaches to RCA
- Lessons to be Learned from Recent
Consequential Events
- Business Incentives for Cost-effective
Investigations
- Advance Preparation for Effective Investigation
- Avoiding Fatal Investigation Errors
- Effective Event Investigation Team Formation,
Development, and Leadership
- Human Performance Improvement
- Investigative Ethics
- Accommodating Diversity in Team and Customers
- Asking the Right Questions
- What to do Before Management Becomes
Enlightened
- Extent of Conditions and Causes
- Evaluating Event Investigation Effectiveness
- Evaluating Event Investigation Program
Effectiveness
- State-of-the-Art Investigative Tools.

2013 Utility Working Conference and Vendor Technology Expo "Nuclear Power - Teaming for the Future"

August 11-14, 2013 • Hollywood, Florida • Westin Diplomat Resort and Spa



ADZ

Philadelphia, PA (Booth 606)

ADZ is a joint venture that combines the world-class capabilities of AREVA and Day & Zimmermann to offer comprehensive engineering, procurement and construction services to U.S. nuclear utilities. ADZ has a successful history of working on complex nuclear projects that drive efficiencies and increase accountability and predictability while reducing costs.

Aerofin

Lynchburg, VA (Booth 149)

Aerofin is a leading manufacturer of Safety Related and Non-Safety Related heat transfer equipment including extended surface cooling & heating coils, shell & tube heat exchangers, vessels, pumps, and parts. Aerofin holds ASME Certificates of Authorization for ASME N, NPT, NS, S, U and PP, and we are NUPIC audited.

Alphasource, Inc.

Philadelphia, PA (Booths 233 & 235)

Alphasource is a leading custom manufacturer and distributor of quality FME/FOD maintenance and drop-prevention supplies, specialized RFID solutions and innovative safety supplies for the Nuclear Industry. Our award-winning Toolsaver RFID SmartCart and expandable platform of RFID Operational Efficiency Solutions is providing the benefits of superior asset tracking, reporting accuracy and loss minimization to many satisfied customers, all while using less manpower. We also offer our award-winning FME/FOD Turnkey Program, Tarps and Protective Covers, Safety and Decon. Supplies, Spill Control Products and Nuclear Grade Wiping Cloths and Coveralls Program. Our products are field-proven, backed by three generations of practical experience, and our quick turnaround capabilities ensure your compliance needs and deadlines are met.

Altran

Cranbury, NJ (Booth 115)

Altran North America is an engineering firm founded in 1986 to provide high quality engineering to the Power Industry. Altran provides services in Civil/Structural, Mechanical, Electrical and I&C engineering, Material Science, Failure Analysis, Aging Management Trainings, FAC, Buried Piping and AOV/MOV Programs. Altran currently employs 330 highly qualified professionals in 11 offices across the country and 20,000 people worldwide.

AMEC

Tucker, GA (Booth 139)

AMEC is a focused supplier of consultancy, engineering and project management services to its customers in the world's clean energy, nuclear, oil and gas, minerals and metals, environment and infrastructure markets. With annual revenues of some \$5.2 billion, AMEC designs, delivers and maintains strategic and complex assets and employs over 29,000 people in around 40 countries worldwide. AMEC's US Nuclear Service is ready to serve clients with more than 2,500 nuclear engineers and specialist in North American and Europe. amec.com/nuclear

American Crane & Equipment Corporation

Douglassville, PA (Booth 609)

American Crane & Equipment Corporation (ACECO) is a leading provider of cranes, hoists and specialized lift systems for the commercial nuclear industry. It has all the in-house capabilities to provide the cranes, custom components and materials needed for nuclear plant upgrades and new plant construction. American Crane has significant experience supplying safety-related single failure-proof replacement cranes and trolleys for dry spent fuel storage operations, as well as other critical lift cranes.

American Crane has performed upgrades of a variety of nuclear plant cranes, including reactor building and turbine cranes and has a full-time service group to perform maintenance of plant cranes.

American Society of Mechanical Engineers

New York, NY (Booth 500)

ASME is the leading international developer of codes and standards associated with the art, science, and practice of mechanical engineering. Starting with the first issuance of its legendary Boiler & Pressure Vessel Code in 1914, ASME's codes and standards have grown to nearly 600 offerings currently in print. These offerings cover a breadth of topics, including pressure technology, nuclear plants, elevators/escalators, construction, engineering design, standardization, and performance testing.

ASME conformity assessment programs—under which a company or an individual is assessed and certified based on demonstrated ability to meet the requirements of an ASME standard—continue to provide a vital service to enhancement of public safety and facilitation of international commerce. ASME is offering a certification program for companies seeking to have their QA Program certified to the NQA-1 Standard. Please visit us at www.asme.org

API Services

Newport News, VA (Booth 506)

API Services provides dimensional measurement and high-value metrology solutions. Our backgrounds range from plant layout to shipbuilding. We utilize the newest technology and constantly update our knowledge. We know your industry, application and know it best. Our goal is to save time, money and provide the best quality solutions.

AREVA

Lynchburg, VA (Booths 607 & 608)

AREVA supplies solutions for power generation with less carbon. Its expertise and unwavering insistence on safety, security, transparency and ethics are setting the standard, and its responsible development is anchored in a process of continuous improvement.

Ranked first in the global nuclear power industry, AREVA's unique integrated offering to utilities covers every stage of the fuel cycle, nuclear reactor design and construction, and related services. The group is also expanding its operations to renewable energies – wind, solar, bioenergy, energy storage – to be one of the leaders in this sector worldwide.

With these two major offers, AREVA's 47,000 employees are helping to supply ever safer, cleaner and more economical energy to the greatest number of people. www.areva.com

ATC-Nuclear

Oak Ridge, TN (Booth 102)

ATC-Nuclear links the past, present, and future through a variety of innovative services. To support the past, we offer warehouse and sourcing services. Our warehouse holds over \$70 million in surplus, unused parts and components. ATC-Nuclear's sourcing team are experts at finding obsolete parts in inventory at other utilities or via their extensive network of other sources. To support the present, we offer a full line of commercial grade dedication, qualification and repair/refurbishment services. And to support the future, ATC has formed strategic alliance partnerships, is performing reverse engineering of circuit boards and power supplies as well as engineering and qualifying replacement components for your maintenance and operational needs.

Automated Engineering Services

Naperville, IL (Booth 706)

Automated Engineering Services (AES) is a fast growing full service Architect Engineering (A-E) company serving primarily the US. These "Services" encompass plant capital and O & M projects with full Service (A-E) design and design/build capabilities supported by our current staff consisting of nearly 180 professionals and covering all engineering disciplines including engineering programs, licensing/regulatory compliance, plant engineering, operations, outage support, decommissioning services, and on-site staff support. Our experience ranges from small single-discipline modifications to large multi-discipline complex projects which include Engineer/ Procure/ Construct (EPC) projects and extends to support resolution of NRC regulatory issues including the mandatory Letters and Orders resulting from the Fukushima event. We have extensive experience in both the PWR and BWR designs having provided quality products to our clients in modifications, specialty engineering, security upgrades including cyber security, digital upgrades, spurious actuations, ECCS strainer module modifications, dose reduction initiatives such as permanent lead shielding design, permanent platforms/scaffolding, and Containment analysis. We have built teaming arrangements with major companies to provide the maximum value to our customers through innovative thinking but continue to look for new ways to further our development of partnerships and joint ventures. AES founded in 1990 has offices in Naperville, IL, its home office, with branch offices in Minneapolis, MN, Green Bay area (Manitowoc, WI), and the Philadelphia area (Swedesboro, NJ). We have a full 10 CFR 50 App B, QA Program audited by NUPIC to perform safety related work. The company's web site address is www.aesengineering.com

Azima DLI

Woburn, MA (Booth 515)

Azima DLI is the leader in predictive maintenance analytical services and products that deliver reliability, availability and uptime. Our WATCHMAN™ Reliability Services utilize flexible deployment models, proven diagnostic software and unmatched analytical expertise for sustainable, scalable and cost-effective condition-based maintenance programs. The company delivers machine health reliability solutions that reduce risk, improve safety, increase production and optimize efficiency.

AZZ (NLI & WSI)

Fort Worth, TX (Booths 700, 701 & 702)

AZZ's nuclear divisions, NLI & WSI, combine the equipment supply capabilities of NLI, and the field services capabilities of WSI, both organizations are leaders in their respective fields. NLI is well known for equipment qualification and supply, with the broadest range of products of any nuclear supplier. WSI is known for Alloy 600 mitigation, MSIV repairs, CRD canopy seals, reactor head replacement, outage support and much more.

The Babcock & Wilcox Company

Charlotte, NC (Booth 124 & 126)

Headquartered in Charlotte, N.C., The Babcock & Wilcox Company is a leader in clean energy technology and services, primarily for the nuclear, fossil and renewable power markets, as well as a premier advanced technology and mission critical defense contractor. B&W has locations worldwide and employs approximately 12,700 people, in addition to approximately 10,400 joint venture employees. Learn more at www.babcock.com.

Barnhart

Memphis, TN (Booth 603)

Over the last three decades, Barnhart and Hake have built impressive nuclear project résumés. Our team of nuclear experts includes personnel with backgrounds from both the construction and operations side of the nuclear industry. Barnhart's experience has brought the kind of innovative design and execution that makes money in reducing Critical Path during outages and improving ALARA in handling components in containment.

Bechtel Power Corporation

Frederick, MD (Booth 125)

Since its founding in 1898, Bechtel has worked on more than 22,000 projects in 140 countries on all seven continents. Today, our 53,000 employees team with customers, partners and suppliers on diverse projects in nearly 50 countries. We stand apart for our ability to get the job done right—no matter how big, how complex, or how remote. www.bechtel.com

Bentley Systems Inc.

Exton, PA (Booth 512)

Bentley offers comprehensive analysis, design, detailing, and documentation software that supports the entire lifecycle of structural projects—such as buildings, plants, and bridges.

BHI Energy

Plymouth, MA (Booth 109)

BHI Energy, comprised of companies Bartlett Nuclear, SUN Technical Services, Power Equipment Maintenance, WeldTech Services and AMES, is a leading provider of specialty maintenance & modification, technical and professional staffing and project services to nuclear power facilities through a qualified, mobile workforce. These services include radiation protection, professional & technical staff augmentation, turbine, valve, welding and civil maintenance, which are offered individually or bundled as a comprehensive service offering. Additionally, BHI offers equipment and technologies including Excel modular scaffolding, scaffold management programs, automated monitoring systems and a variety of other contamination control materials.

Black Diamond Services, Inc.

Grayslake, IL (Booth 532)

Black Diamond Services (BDS) is a leading provider of project management services, construction management services, and technical services for complex improvement projects for the nuclear industry. BDS has specialized resources holding key leadership positions on EPU Projects, Major Project plant modifications, Outage Support Work, Steam Generator Replacement Projects, Reactor Head Replacement Projects, and many other maintenance and modification projects.

Black & Veatch Corporation

Overland Park, KS (Booth 131)

Black & Veatch (www.bv.com (<http://www.bv.com/>)) is a global leader in the consulting, engineering, construction and operation of what the world needs now and in the future in the crucial areas of energy, water and telecommunications and in providing up-to-the-minute services in the fast changing nuclear, federal and environmental markets.

BLOXR Corp.

Salt Lake City, UT (Booth 105)

BLOXR introduces the latest invention in radiation attenuation technology. You can get lead equivalent performance without the use of lead and with less weight. General and customized use product applications tailored specifically to the nuclear power industry are currently available.

Meet us at Booth 105 in the exhibitor hall and let us discuss your specific needs.

The Brock Group

Beaumont, TX (Booth 434)

Since 1947, The Brock Group has offered clients a small company interaction with the resources available from one of the largest specialty craft providers in the United States. Continuing the tradition of integrity and performance excellence, Brock's 17,000+ employees offer industry the complete single source benefit of doing business with a financially strong and resource abundant contractor. With operational centers strategically located throughout the United States and Canada, Brock offers scaffolding, specialized shoring, coatings, insulation and associated services to a diverse industry that includes Nuclear, Petrochemical, Refining, Power Generation, Offshore, Logistics, Pipelines & Transmission, and Pulp & Paper. Brock's organization structure and internal cooperative culture provide expert leadership for nationally commended, award winning safety and management processes. Brock provides performance in services which sequentially supports and strengthens our customers' strategic competitive advantage and bottom line profitability.

Burns & McDonnell

Kansas City, MO (Booth 301)

Founded in 1898, Burns & McDonnell is a 100 percent employee-owned, full-service engineering, architecture, construction, environmental and consulting solutions firm.

Burns & McDonnell ranks in the upper 5 percent of Engineering News-Record's Top 500 Design Firms and is among the leaders in many service categories. With the multidisciplinary expertise of more than 3,700 professionals in more than 20 offices, Burns & McDonnell plans, designs, permits, constructs and manages facilities worldwide with one mission in mind — to make our clients successful.

Candu Energy Inc.

Montreal, Quebec, Canada (Booth 508)

Candu Energy Inc. (Candu) is a leading full-service nuclear technology company providing nuclear power reactors, products and services to customers worldwide. Candu is the designer of CANDU® reactors. Candu provides CANDU and LWR engineering services, plant lifemanagement programs, specialized tools and products enhancing plant safety, reliability and performance.

CB&I

The Woodlands, TX (Booths 111 & 113)

CB&I (NYSE: CBI) is the most complete energy infrastructure focused company in the world and a major provider of government services. Drawing upon more than a century of experience and the expertise of approximately 50,000 employees, CB&I provides reliable solutions while maintaining a relentless focus on safety and an uncompromising standard of quality.

Certrec

Fort Worth, TX (Booth 229)

Founded in 1988, CERTREC is a regulatory compliance process expert that helps utilities manage the regulatory process to their advantage. With more than 300 cumulative years of regulatory and industry experience with the Nuclear Regulatory Commission (NRC), the Federal Energy Regulatory Commission (FERC), the North American Electric Reliability Corporation (NERC), and other Regional Entities, Certrec's Office of Licensing and Compliance, Office of NERC Compliance, Office of Assessment and Recovery, and New Plant services are used by utilities across North America.

CHAMPS Software, Inc.

Crystal River, FL (Booth 522)

CHAMPS Software, Inc. (CHAMPS) is an EAM provider focused on developing and implementing state of the art software solutions that enable enterprises to optimize the life cycle of their capital assets. CHAMPS has been optimizing work forces, equipment, facilities, outages, safety and inventories for Government and Commercial Nuclear facilities around the world since 1976!

CHAMPS Provides the following solutions:

- Work Management
- Supply Chain Management
- Lockout Tagout
- Outage Management
- Corrective Management/Issues Tracking
- Permits
- Calibration
- Project Tracking
- Scheduling
- Dashboard KPI Analytics

CiDRA Power Generation

Wallingford, CT (Booth 537)

CiDRA's SONARtrac® flow technology is a clamp-on, non-ultrasonic, flow meter for power generation. CiDRA offers high value Nuclear applications in: Safety Related Service Water, ECCS min-flow loop testing, IST support, secondary flow verifications, in-situ pump testing, and excels where complex piping arrangements preclude other nonintrusive technologies.

Crane Nuclear

Kennesaw, GA (Booth 237)

CRANE Nuclear designs and manufactures a variety of valves, valve parts, and valve testing equipment for domestic and international nuclear power plants. Our trusted brands (Powerhouse™, Viper™, and Votes® Infinity) and reliable services provide complete valve solutions that help ensure nuclear plant safety through the reliable performance of motor-operated valves, air-operated valves, and checkvalves.www.cranenuclear.com

CSA, Inc.

Atlanta, GA (Booth 438)

CSA Laser Scanning Technology – PanoMap® is database-driven laser scanning technology representing as-built 3D laser scan models. PanoMap® offers powerful features which allow viewing and measuring, modeling, interference checking (directly against scan data), equipment removal simulation, pre-job briefings, and integration with radiation monitoring equipment. PanoMap® enables planning, scheduling, reviewing, identification, explanation, and resolution for projects. Existing facility databases can be integrated with and accessed through PanoMap®. Laser Scan Technology is fully integrated to/from all major 3D CAD systems. Typical projects include replacement of FWH, RC pumps, chillers, MSR, transformers, valves, breakers, as well as support of engineering modifications and changes. The iPanoMap™ walkdown application is available on a tablet/smartphone.

Curtiss-Wright Flow Control Nuclear Group

Brea, CA (Booths 416 & 418)

Curtiss-Wright's nuclear focused businesses (Anatec-LMT, AP Services, EMD, Enertech, EST Group, NETCO, Nova, QualTech NP, Sciencetech, Target Rock), have supported the nuclear power industry for 60 years with unmatched knowledge, experience and technical superiority. Our capabilities uniquely meet the complex and ever evolving needs of operating reactors and new construction.

Day & Zimmermann

Lancaster, PA (Booth 605)

Day & Zimmermann is the #1 ranked O&M contractor in the power industry. We are the leading provider of maintenance, modifications, and major projects to the nation's nuclear power generation fleet. Specialty services include integrated valve services, HP/RP technical support, condenser retubing, turbine maintenance and retrofit, and non-manual staffing services.

Diakont

San Diego, CA (Booth 600)

Diakont is a full-cycle engineering, manufacturing, and service company that provides high-tech solutions which enhance the safety and economy of the nuclear power and pipeline industries. With a North American facility located in California, Diakont is a leading manufacturer of pipeline inspection robotics, digital I&C systems, fuel handling equipment, and radiation-tolerant camera systems. Diakont products and services are utilized worldwide by power plants of all designs.

Doosan HF Controls

Carrollton, TX (Booth 141)

Doosan HF Controls supplies nuclear-grade safety and non-safety digital instrumentation and control system solutions to both nuclear and nonnuclear customers world-wide. Our safety platform has received approval from the US NRC, Korean KINS, and TUV-Rheinland and used extensively in major international I&C programs.

DRS Consolidated Controls, Inc.

Danbury, CT (Booth 420)

DRS Consolidated Controls, Inc. (DRS-CCI) has been a premier supplier of Class 1E and non-1E Instrumentation and Control (I&C) systems to the nuclear industry for more than fifty years.

DRS-CCI designs, qualifies, and manufactures both safety critical and non-safety I&C systems for commercial nuclear power plants and the U.S. Navy.

Our reactor and plant control systems have been installed worldwide in more than thirty commercial nuclear power plants and in every Navy nuclear vessel since the USS Nautilus. Our commitment to long term product support includes installation, training, start-up, field service, spare components and assemblies, and commercial grade dedication programs. DRS-CCI is an ISO-9001 certified facility and has continuously maintained a 10 CFR Part 50 Appendix B Nuclear Quality Assurance program since 1974. Learn more at www.drs-cci.com.

Edgen Murray

Charlotte, NC (Booth 116)

Edgen Murray is an accredited ASME Material Organization (QSC-614) and compliant with NQA-1 and 10 CFR 50 App B. The scope of our safety and non-safety related materials includes pipe, tubing, fittings, forgings, flanges, plate, bars, fasteners, and valves in ferrous and non-ferrous grades. Our global stocking program offers quick scalability from our nuclear operations located in Charlotte, NC.

Emerald Professional Staffing, Inc.

Grayslake, IL (Booth 534)

Emerald Professional Staffing (EPS) is a WOB provider of high quality professional, field-based, and industrial staffing and consulting services to the nuclear industry as well as the commercial power generation industry. Our team of experienced, knowledgeable specialists works directly with established staffing providers in the industry, ensuring that the highest degree of proficiency and quality necessary for the tasks and projects are provided.

ENERCON

Kennesaw, GA (Booth 215)

ENERCON is a diversified energy consulting company offering engineering, licensing, environmental and management services. We are currently ranked in the top 200 of all International Engineering Design firms and ranked in the top 5 of U. S. Nuclear Engineering firms. An employee-owned company of over 1,400 people, the firm has 23 offices nationwide and 2 internationally, with clients including most of the country's nuclear power plants, the Department of Energy and many Fortune 500 companies. Services provided include comprehensive design, engineering, procurement and construction management related to nuclear plant retrofits, new plant siting studies and licensing, plant life extension, power uprates, and operations support. ENERCON is currently focused on developing new nuclear plant applications and operating nuclear plant solutions for industry challenges such as PWR and BWR sump strainer clogging, extended power uprate, spent fuel storage and transport, improved plant security, instrumentation & control upgrades, and post-Fukushima response. For more information about us visit our web site at www.enercon.com.

EnergySolutions

Oak Ridge, TN (Booth 307)

EnergySolutions is an international company headquartered in Salt Lake City. As a worldwide leader in the safe recycling, processing and disposal of nuclear material, we provide innovations and technologies to the U.S. Department of Energy, commercial utilities, medical and research facilities. In the United Kingdom, we operate and provide nuclear decommissioning services for 22 nuclear power plants. We remain committed to the future of responsible energy in the United States and to our role in helping our country achieve energy security, reduce carbon emissions and protect the environment through clean, safe and affordable energy sources.

EPM, Inc.

Framingham, MA (Booths 424 & 426)

Engineering Planning and Management, Inc. (EPM) provides engineering, software, and probabilistic risk assessment (PRA) consulting services to utilities in North America, Europe and Asia. For over 30 years EPM has been working with utilities to achieve compliance with complex regulatory requirements. EPM continues to provide expert fire protection and systems engineering guidance as NRC regulations change and evolve, particularly in the new performance-based, risk-informed regulatory environment of 10CFR50.48(c) and NFPA 805. EPM is an industry leader in Post-Fire Safe Shutdown, Fire Modeling, PRA, and Thermal-Hydraulic Systems Analysis. EPM is also the leading provider of innovative software that optimizes engineering and business processes to achieve regulatory compliance cost-effectively with emphasis on long-term configuration management. EPM's Genesis Solution Suite®, which is safety-related software (10CFR50Appendix B compliant) includes EDISON (Cable Management System) and SAFE (Post-Fire Safe Shutdown Analysis). EDISON is the only current cable management system developed specifically for new plant designs and construction projects. SAFE automates the engineering programs for 10CFR50 Appendix R, NFPA 805, Fire PRA, and Non Power Operation (NPO). As a single repository of information, SAFE simplifies long-term configuration management and control of these programs. EPM's team of engineering, PRA, and information technology personnel have developed innovative methods to achieve practical, comprehensive, and cost-effective solutions using a combination of creative strategies, time-tested engineering methods, and an experienced staff.

EXCEL Services Corporation

Rockville, MD (Booths 223, 225 & 227)

EXCEL Services Corporation specializes in providing operations, Engineering, safety and regulatory services for energy and environmental projects worldwide. These specialized services include: License Renewal, Power Uprate, 24 Month Fuel Cycle Conversions, Licensing and Operations Support, Improved Technical Specifications Conversions, Quality Assurance Solutions, Training, Spent Fuel Storage Licensing, New Plant Site Permitting (ESP), and Combined License (COL) Support. EXCEL has worked with almost every nuclear power plant and many other nuclear facilities in the U.S., and has worked with many international nuclear facilities and organizations for more than 27 years.

Exponent

Menlo Park, CA (Booth 510)

Exponent offers unparalleled multi-disciplinary expertise and rapid Exponent offers unparalleled multi-disciplinary expertise in failure analysis and performance improvement. Exponent's unique capabilities in root cause analysis and rapid response capabilities assist clients in assessing complex engineering and scientific problems. Our staff thrives on solving tough problems that have high value and high consequence. Exponent provides dispute resolution services and litigation support. Our team of scientists and engineers in engineering, construction, environmental, risk and health specialists is unique. Exponent is a "one stop shop" to support challenges in nuclear plant operation and construction. We offer proven experience on projects serving the nuclear industry.

Fairbanks Morse

Beloit, WI (Booth 207)

Fairbanks Morse – Legendary power. Driving the future.

With over 100 EDGs providing critical backup power in the U.S., Fairbanks Morse supplies emergency diesel generators to the nuclear industry. We also provide factory direct service, OEM parts and customized engineering to ensure the long life of your Fairbanks Morse engine.

FIU-ARC (Applied Research Center)

Miami, FL (Booth 519)

Since 1995, ARC has supported DOE's environmental restoration mission by conducting applied research in key technical areas: Deactivation & Decommissioning, Waste Processing, and Soil & Groundwater. In 2007, the DOE-FIU Science & Technology Workforce Development Program was established to train and mentor minority STEM students.

Flowserve Corporation

Vernon, CA (Booths 428 & 430)

Since the late 1940's, Flowserve has been a pioneer of pump and seal technology for the nuclear power industry. With many 'firsts' to its credit over the decades, Flowserve has advanced pump, seal and valve performance, safety and reliability for Nuclear Steam Supply System applications. Flowserve provides pumps, mechanical seals, valves and actuators. To support existing installations, Flowserve also provides OEM parts, repairs and upgrades, on-site technical service, engineering support and turnkey project services. Flowserve is a global supplier, ready to support existing nuclear plants today and tomorrow's new plants. For more information, please contact Jim Cook at 1-845-548-9275.

G.D. Barri & Associates, Inc.

Peoria, AZ (Booth 106)

G.D. Barri & Associates (Barri) is celebrating over 23 years in business. We have worked with 51 nuclear plant units, 16 DOE nuclear sites, and 70 oil, gas, combined cycle, wind and solar plants, where we provided over 9MM hours of contract technical, engineering and union craft labor. Our projects included all types of operations support, engineering services, outage support, EPU, SGR, training, procedure development, digital asset engineering, and most recently cyber security staff support.

Our management and national recruiting team have extensive nuclear knowledge that translates into value added, fresh processes and ideas to achieve client goals. The benefit of our experience is sure to be evidenced in your upcoming new programs. Our successful past makes us the best choice for a staffing partner when looking to the future. Please call either Georgia Barri or Rick Duff at 623-773-0410 to learn more regarding our programs and services.

GE Hitachi Nuclear Energy

Wilmington, N C (Booth 203)

GEH is a world-leading provider of advanced reactors and nuclear services. Established in June 2007, GEH is a global nuclear alliance created by GE and Hitachi to serve the global nuclear industry. The nuclear alliance executes a single, strategic vision to create a broader portfolio of solutions, expanding its capabilities for new reactor and service opportunities. The alliance offers customers around the world the technological leadership required to effectively enhance reactor performance, power output and safety.

Technical Exhibitors

Graybar

Clayton, MO (Booth 404)

Graybar Electric Company, Inc., a Fortune 500 corporation with more than 240 North American distribution facilities, is a leader in the distribution of high quality electrical, networking, and security products, and specializes in related supply chain management and logistics services. As an Energy Star Partner and a member of the U.S. Green Building Council, Graybar is committed to delivering energy-savings products and “green” knowhow to its customers. From lighting to sensors and metering to controls and drives, Graybar can provide products, systems, and advice that deliver measurable savings of time and money.

Howden North America Inc.

New Philadelphia, OH (Booth 802)

Howden North America Inc. (HNA)(fka Howden Buffalo Inc.) is the leading supplier of safety and non-safety related fans and blowers for the nuclear industry, as well as equipment and services for other applications. HNA maintains formal quality systems that conform to 10 CFR 50 Appendix B, ASME NQA-1, ASME AG-1, and ISO 9001-2008. Our products are also environmentally and seismically qualified for both mild and harsh environment applications.

In addition, if replacement motors are required for either of these fan designs, Howden North America Inc. can supply safety or non-safety related motors either refurbished to original specifications or as replacements with Reliance/Baldor Electric motors. Howden North America, Reliance/Baldor Electric and Westinghouse Electric have also formed an alliance to support the repair or rebuild of contaminated nuclear fan/motors.

Howden 360 is our commitment guarantee to provide superior customer service throughout the life cycle of your equipment, plant and career. With capabilities to engineer or provide products and aftermarket services in virtually every situation, Howden 360 continues to provide customers with innovative solutions that no other company can offer.

Howden North America Inc. is the official provider of service and supply for thousands of nuclear fans, fluid drives, compressors, and other products in service throughout the world from equipment originally manufactured by Buffalo Forge, Joy Fans, Westinghouse, American Standard, Howden, and Novenco.

Hurst Technologies Corp.

Angleton, TX (Booth 403)

Hurst Technologies Corp. is an engineering services firm specializing in instrumentation, control, automation, asset and knowledge management, and digital systems.

IBM Corporation

Armonk, NY (Booth 138)

At IBM, we strive to lead in innovation with the most advanced information technologies. We translate these technologies into business value for our customers. IBM is focused on nuclear power and using IBM Maximo Asset Management and other IBM applications to meet the needs of both operating and new build plants.

Idaho National Laboratory

Idaho Falls, ID (Booth 401)

Idaho National Laboratory is the U.S. Department of Energy's leading center of nuclear energy research and development where more than 4,100 researchers and support staff work with national and international governments, universities and industry partners to deliver energy and national security solutions and expand the frontiers of science and technology.

Invensys

Lake Forest, CA (Booths 118 & 120)

Invensys is an alliance of world class brands including Avantis, Foxboro, Wonderware, Eurotherm, SimSci and Triconex. Invensys Nuclear utilizes the Invensys brands to offer fully integrated Digital Upgrade I&C Solutions to the Global Nuclear Power Industry. Invensys Nuclear collaborates in development, integrated design, and execution of Safety and Non-safety related digital solutions proven to maximize the availability and utilization of nuclear plant assets. Our Critical Infrastructure & Security Practice (CISP) group delivers integrated security solutions and services to assure nuclear plant assets and critical infrastructure meet the latest NRC regulations. Invensys will be displaying the recently approved TRICON V10 and the latest advancements in Turbine Control and Digital Feedwater Upgrade technology.

Joseph Oat Corporation

Camden, NJ (Booth 704)

Joseph Oat is a well renowned integrated OEM designer and fabricator of ASME Section VIII & Section III / safety-related products for the Nuclear Power Industry. We have supplied critical heat exchangers and pressure vessels, spent fuel/rad-waste canisters, and NQA-1 components to nuclear customers worldwide. Our QA system has been audited by NUPIC and complies with NQA-1 & 10 CFR 50 Appendix B. We have continuously held an 'N' Stamp certification since 1966 and maintain an excellent reputation in the industry. We Make Metal Work®.

Kiewit Power Nuclear Co.

Lenexa, KS (Booth 204)

As the United States continues to renew its interest in nuclear power generation, Kiewit's diversified, fully-functional nuclear team is positioned to take on the challenge. Kiewit Power Nuclear Co. (KPN) is the premier provider for all facets of nuclear services including:

- Maintenance/Modifications
- Construction
- Engineering
- Decommissioning/Demolition

KPN takes a proactive approach to nuclear and industrial safety and utilizes degreed field engineers to manage work in a nuclear environment. Focused on doing the job right the first time with the highest safety, quality and integrity, KPN has the skill, knowledge and resources to make every project a success.

Kinectrics

Toronto, Ontario, Canada (Booths 800 & 801)

Kinectrics offers specialized testing facilities and advanced expertise in life cycle management for nuclear, including equipment and components, genuine replacement parts, inspection and maintenance systems and environmental technologies. Our US facility provides qualified local support for EQ, CGD and other technical services for new build and the existing operating fleet.

KnightHawk Engineering

Houston, TX (Booth 516)

Specialists in Design, Failure Analysis and Troubleshooting of Static and Rotating Equipment. We are a Technology based Specialty-Engineering company offering Consulting, Field Services, Analysis and Testing. We have Nuclear Qualified, Registered Professional Engineering Staff. We have extensive experience in troubleshooting and solving problems in Nuclear power facilities.

KSB

Henrico, VA (Booth 108)

KSB has supplied over 150,000 nuclear pumps and valves to over 120 nuclear power plants worldwide. KSB's authorization to use the ASME stamps N, NPT, and NS for Class 1, 2, and 3 on pumps and valves reflects our commitment, qualification, and international recognition as a world leading supplier of components for nuclear power plant applications.

L-3 MAPPS

Montreal, Quebec, Canada (Booths 601 & 602)

When you're looking for increased reliability in your power plant's performance, you can count on L-3 MAPPS' simulation experience to get you there. Our dedication to true-to-life power plant simulators ensures that your personnel have the knowledge required to safely and efficiently operate your power plant. Providing more than just training devices, our simulator solutions - powered by L-3 MAPPS' unparalleled Orchid™ suite of simulation products - will elevate your engineering team to new heights in addressing plant design issues, procedural deficiencies and reliability improvements.

Lockheed Martin

Dallas, TX (Booth 202)

Lockheed Martin Nuclear Systems & Solutions provides total systems solutions and services for civil nuclear power applications. Lockheed Martin is a lead systems integrator and provider of discrete and digital safety-critical instrumentation and control (I&C) systems for civil and DoD customers for over 50 years.

Merrick & Company

Charlotte, NC (Booth 405)

Merrick & Company provides multi-discipline design and design-fabrication/design-build services for existing fleet plant modifications and new-build nuclear power plants. Additionally Merrick offers specialty engineering services including: procurement engineering; first-of-a-kind equipment design and qualification; facility/system/equipment commissioning; specialized shielded and radioactive material handling systems; containment/confinement ventilation systems; 3D Laser Surveying and Mapping integrated with virtual video and 3D design software systems.

Mesa Associates Inc.

Knoxville, TN (Booth 130)

Mesa is a full service engineering, procurement and construction management (EPCM) firm experienced in Nuclear Power generation projects. Mesa specializes in plant modifications and upgrades and fast tracked Design build Projects. Mesa staff is highly qualified and experienced in developing Engineering/Design modification documentation, 10 CFR 50.59 evaluations, review and updating of the FSAR. Our approved/proven Appendix B Quality Assurance and Equipment Qualification/Dedication programs are instrumental to our project delivery success. In addition, Mesa brings a disciplined Project Management approach to each of our projects, e.g., WBS, project schedule, cost controls, and scheduled project reviews. Mesa's core competencies include: I&C (analog to digital upgrades), component change replacement including commercial grade dedication, e.g., Chillers, diesel generators, feed water heaters, DCS upgrades, transformers, and spent fuel storage systems. Mesa understands how to evaluate the existing system/component to provide an economical - seamless plant modification.

Mirion Technologies

Smyrna, GA (Booth 100)

Mirion Technologies is a global radiation detection, measurement and analysis company with products that span the nuclear fuel cycle. Exhibiting in Booth 100, the Radiation Monitoring Systems Division offers a range of class 1E safety and non-safety radiation monitoring systems including Area/Process/Liquid and Neutron Flux Monitoring Systems (MGP/MGPI-H&B) for nuclear facilities worldwide.

Mitsubishi Nuclear Energy Systems, Inc.

Arlington, VA (Booths 303 & 305)

Mitsubishi Nuclear Energy Systems (MNES) is a designer of America's next generation of clean air nuclear energy generating stations and is an emerging leader in nuclear energy services. MNES was established in 2006 by Mitsubishi Heavy Industries, Ltd. (MHI) as the supplier for Mitsubishi nuclear technologies in the United States. From its headquarters in Arlington, Virginia, MNES is leading the way for safer and more reliable nuclear energy.

NRG (Nuclear Research & Consultancy Group)

The Netherlands (Booths 533 & 535)

NRG with US associates provide the US nuclear industry services in the areas of: Safety analyses and licensing (PSR, PSA, FSAR, deterministic analyses)

- Structural integrity, ageing management and Long Term Operation
- In-core fuel management with the ROSA and SOSA software
- Automated In-Service Inspections
- Radiation protection.
- High Flux Reactor and hot cells

From the inception of nuclear power we have been active at the intersection of nuclear technology, safety and guidelines.

Nuclear News

LaGrange Park, IL (Booth 402)

Nuclear News is the monthly membership magazine of the American Nuclear Society (ANS). It covers the latest worldwide developments in the nuclear field, a large part of which concerns nuclear energy. As the flagship publication for this important segment of the power industry, nearly 300 companies advertise annually in Nuclear News to promote their nuclear-related capabilities, products, services, and employment opportunities to our more than 11,000 readers. Call 1-800-NUC-NEWS or visit us online at www.ans.org/advertising.

Nuclear Plant Journal

Downers Grove, IL (Booth 217)

Nuclear Plant Journal, now in its 31st year, provides technical information exchange among managers and engineers in nuclear power industry worldwide. Circulation is 12,000 (BPA audited). The Journal is published six times per year. The Products & Services Directory is published yearly in December. www.nuclearplantjournal.com Nuclear Safety Associates-NSA

Nuclear Safety Associates-NSA

Charlotte, NC (Booth 117)

NSA is a premier provider of safety and risk analysis, engineering, licensing, fire protection, operations management, and safeguards and security services to the nuclear industry. Our unique focus is on hard-to-find specialty expertise serving a broad client base within the commercial nuclear industry and the US DOE nuclear complex, including power reactor operators, reactor vendors, new build projects, and within nuclear fuel cycle operations from enrichment,

Technical Exhibitors

to fabrication, transport, reactor core design and fuel management, spent fuel and nuclear waste handling and disposal. A privately held company with headquarters in Charlotte, NC, and with more than 150 employees in six offices across the US, NSA has been repeatedly recognized as one of the fastest growing small businesses and top specialty engineering firms in the United States.

NWI Consulting, LLC

Knoxville, TN (Booth 709)

NWI Consulting, LLC is a professional consulting firm specializing in power generation performance improvement services, specialized learning interventions, computer-based training, organizational development, accreditation renewal/recovery, and professional staff augmentation. NWI has a broad portfolio of U.S. and international clients in the electric generation industry and is headquartered in Knoxville, TN. NWI's power plant services includes supporting such areas as Operations, Training, Outage Management, Nuclear Oversight, Performance Improvement, Engineering, Maintenance, Radiation Protection, Chemistry and Emergency Preparedness. NWI has assisted clients in other more specialized efforts including Leadership/Management Development, Executive Coaching, Conflict Resolution, Multi-Discipline Assessments (including Organizational Effectiveness and Safety Culture), Root Cause Analyses, NRC 95-002 & 3 Preparatons and specialized Safety Analyses (50.59).

Penhall Company

Anaheim, CA (Booth 206)

PENHALL COMPANY is the largest provider of concrete cutting, breaking, and excavation services in the United States. With forty locations in seventeen states and Canada, our strategic locations allow us to take advantage of local assets. Working at Commercial, DOD or DOE sites, we are best known for our expedient and quality work in addition to being the contractor of choice when the risks are high. Penhall Company employs experienced and nuclear trained operators and all the tools necessary to complete your nuclear project on time, on budget and as safely as possible adhering to our "Zero Accident" program.

Typical applications of our nuclear service experience include wire sawing and removing 2500 sq. ft. of existing concrete for a nuclear plant restart, wall sawing 30" thick concrete for Steam Generator Replacement, Water Treatment Plant pipe cutting for corrosive inspection, breaking thick concrete to permit removal of Sodium Pumps, engineering the demolition of a contaminated 250' Stack, excavation and removal of low level hazardous materials stockpiled on site, removal of activated concrete Beam Tubes and aluminum liner and GPR scanning for outdoor utility locates.

Polygon US Corporation

North Andover, MA (Booth 104)

Polygon based out of North Andover, MA has been a major supplier to the power industry for over 35 years. Polygon provides temporary climate control equipment including dehumidifiers, air conditioners, chillers and heaters to support short and long term plant maintenance shutdowns.

PSC

East Chicago, IN (Booth 705)

Beginning in 1986, PSC built a reputation for quality, integrity and expertise in post-tensioning surveillance. Today, we are a sophisticated engineering innovator and trustworthy partner capable of solving an array of plant challenges from maintenance dilemmas and staffing shortfalls to heavy lifting and transport of multimillion dollar equipment.

Quantapoint, Inc.

Houston, TX (Booth 518)

Quantapoint delivers integrated service solutions comprising equipment, software, and workflows which apply 3D Digital Facility modeling technology to engineering, maintenance, and compliance business processes. We help facility owner/operators improve capital efficiency by reducing dimensional uncertainty while improving communication among project team members.

RCS Nuclear

Charlotte, NC (Booth 247)

RCS Nuclear is a premier provider of workforce solutions for the energy industry with an emphasis in the nuclear sector. RCS specializes in Direct Hire, Contract Staffing, and Payroll Services. Since 1994 we have recruited and placed thousands of engineering, project management, project controls, information technology, business and finance professionals worldwide. In June 1997, RCS was ranked the "#1 Fastest Growing New Small Business in America" by Entrepreneur magazine. RCS continues to grow and provide recruiting and staffing services for best of class companies.

Red Wolf Associates

Cary, NC (Booth 205)

Red Wolf Associates is an engineering service company providing analysis services to the commercial nuclear power industry with expertise in areas such as thermal hydraulics, HVAC, mechanical engineering, fire protection and dose analysis.

ReNuke Services, Inc

Oak Ridge, TN (Booth 208)

ReNuke was designed and built specifically to bring innovative human capital consulting and staffing programs to the resurgent commercial nuclear power market. The name itself is emblematic of our commitment to nuclear energy. In a period where personnel needs are growing and the workforce is shrinking, a fresh approach to staffing nuclear positions is being demanded by both candidates and customers - and ReNuke is responding. The company provides four basic services: Defined-scope project execution, traditional staff augmentation, feebased permanent placement, and strategic human capital consulting. ReNuke's service offerings are supported by a full-time leadership staff with over 300 years of collective nuclear industry experience. We are technically qualified in project management, project controls, contract administration, engineering, operations, outage management, procurement, health physics, decommissioning, transportation, and quality assurance.

Research & Production Corporation Radiy

Kirovograd, Ukraine (Booth 406)

Established in 1954, Radiy designs, develops, manufactures and installs digital instrumentation and control (I&C) systems for safety and process control of nuclear facilities and industries with high level of safety requirements. For over 15 years Radiy has been using its safety designs to offer advanced technical solutions to meet the challenges of aging NPPs and New Build projects.

Rolls-Royce

Huntsville, AL (Booths 803 & 804)

Rolls-Royce provides a broad range of commercial nuclear expertise with a

focus on providing nuclear utility vendors and operators with integrated, long-term support solutions and services. A world-leader in nuclear safety-critical digital instrumentation and control systems, Rolls-Royce has nuclear I&C systems installed in over 200 reactors across 20 countries. Its newly created Nuclear Services business provides a comprehensive suite of services and fleet solutions including remote tool design and delivery; engineering and obsolescence management services and software solutions, plant monitoring solutions; and an N-stamp custom design / build capability.

S&ME, Inc.

Raleigh, NC (Booth 128)

S&ME provides award-winning engineering and environmental services to the nuclear power industry. Since 1973, we have partnered with owners, operators and their consultants assisting them with permitting, construction and refurbishing nuclear power plants, fuel facilities and other nuclear energy related programs. As an employee-owned firm operating from 26 offices in the Southeast and Midwest, our goal is to provide the engineering and scientific services our clients require to achieve success.

SCHOTT Electronic Packaging

Southbridge, MA (Booth 501)

SCHOTT Electronic Packaging produces Electrical Penetration Assemblies (EPAs) for nuclear power plants and submarines. SCHOTT Electronic Packaging is a leading manufacturer of high-quality hermetic housings and components for the reliable, long-term protection of sensitive electronics. Core technologies include glass-to-metal and ceramic-to-metal sealing, thermal sensing components and cutting-edge specialty glass competencies.

Siempelkamp Nuclear Services, Inc.

West Columbia, SC (Booth 502)

Siempelkamp Nuclear Services, Inc. (SNS's) core business comprises Project Management, Engineering and Planning, Components and Systems Solutions for equipment and retro-fitting as well as Decontamination and Decommissioning (D&D), Modernization/Modification of Components and Systems of Nuclear Facilities, Stud Tensioning Devices, Canisters and Containers, Recycling, Manufacture, Calculations and Analyses service.

SPX

Charlotte, NC (Booths 707 & 708)

SPX helps customers across the power and energy industry meet key business challenges, including the increasing demand for power generation and distribution.

We provide the solutions needed to establish new power plants and enhance existing ones, and leverage our expertise in aftermarket services to ensure the optimization of ongoing power plant operations - often with reduced environmental impact, greater efficiency and lower costs and with regard to other key business challenges.

In addition to our vast experience with nuclear power plants, we apply our innovative, proven solutions to help advance the efficient, more cost-effective use of traditional fuel sources as well as alternative energy sources such as wind, solar, geothermal and biomass.

Wherever power is needed in the world, SPX is ready with the technologies,

services and product solutions to make it happen.

STRUCTURAL

Hanover, MD (Booth 538)

STRUCTURAL collaborates with nuclear clients to improve infrastructure by combining our award-winning specialty construction, repair and maintenance services with our proprietary technologies to provide innovative solutions for demanding engineering and construction challenges.

Sulzer Pumps (US) Inc.

Brookshire, TX (Booth 604)

Sulzer Pumps is widely recognized for technical excellence in nearly all nuclear plant applications, providing primary and secondary pumping and sealing solutions, including our Balanced Stator seal for both PWR and BWR main coolant pumps. Nuclear service installations exceed over 80 sites in the US and 100 worldwide. We provide pump repair, replacement parts, and testing services for all OEM pumps compliant with ASME, PTC, HI and ISO.

System One

Pittsburgh, PA (Booth 107)

For nearly 30 years, System One has delivered a full suite of staff augmentation, managed staffing and quality solutions to power producers, service providers and OEMs in the nuclear energy sector. We support the full production lifecycle, from licensing and construction to operations and maintenance. View our capabilities at www.systemoneservices.com.

TELEDYNE Brown Engineering

Huntsville, AL (Booth 523)

Teledyne Brown Engineering, Inc. has supported the nuclear industry for over 45 years and is a recognized leader in providing innovative systems engineering, cutting edge technology, and advanced manufacturing solutions. Our strengths in both engineering and manufacturing distinguish us from our competitors and allow us to provide extensive, precise solutions

Tosan Inc.

Denver, CO (Booth 407)

TOSAN is an Organizational Effectiveness Consulting Practice with deep experience and success in the Energy Industry as well as other highly complex, safety oriented operations. We help organizations and individuals perform better and achieve more by increasing their capacity - to implement change, generate and transfer knowledge, and support strategic initiatives at the front-line through organization-wide alignment.

Toshiba America Nuclear Energy Corporation

Charlotte, NC (Booths 302 & 304)

Toshiba America Nuclear Energy Corporation (TANE), established in 2008, operates to provide North American customers with Toshiba's nuclear expertise gained from 50+ years engineering, constructing and operating nuclear power plants. TANE's mission is to provide advanced nuclear technologies & services to ensure safe, economical & reliable operations to these customers.

Technical Exhibitors

UniTech Services Group

Springfield, MA (Booth 436)

UniTech Services Group, Inc. is the world's largest supplier of nuclear protective clothing and accessories. Our Nuclear licensed decontamination facilities throughout the US and Europe provide the following services: radiological laundering of protective clothing, decontamination and testing of respirators, and the decontamination of tools & equipment (scaffolding, hand tools, portable HEPA vacuums, etc.) Our products and services are designed to provide our customers cost effective protection of their workers with minimal generation of radioactive waste.

URS Corporation

Ft. Mill, SC (Booth 219)

URS provides integrated engineering, procurement, construction, and maintenance services to the commercial nuclear industry and similar services in support of managing/operating government nuclear facilities. The Steam Generating Team (SGT), our joint venture with AREVA, is a leading supplier of engineering and construction support services for large nuclear component replacements.

ValvTechnologies

Houston, TX (Booth 703)

ValvTechnologies, www.valv.com (<http://www.valv.com/>), is a Houston based valve manufacturer best known for our Four Year, Zero Leakage Guarantee. ValvTechnologies has been solving problematic valve applications in power generation for 25 years. By offering Better-Built, Cobalt-Free, Metal Seated, Severe Service Ball Valves for Isolation & Control, Parallel Slide Gate Valves and In-line, Non-slam Check Valves, we pride ourselves on our client-partner relationships and have made it our mission to offer Best in Class service and support. We are ASME N and NPT Authorized with a 10CFR50 Appendix B program for Safety Related equipment – we stand committed to offering the very best valve solutions to the nuclear industry.

Ventyx, an ABB Company

Atlanta, GA (Booth 129)

Ventyx, an ABB company, is the leading enterprise software and service partner for the world's essential industries. The world relies on you to make the most of the resources that matter. We know your challenges and understand where your markets are headed. That's why you can count on us to deliver solutions that help you minimize risk, maximize profits, and strategize for the future.

Wagstaff Applied Technologies

Spokane, WA (Booth 507)

Wagstaff AT provides the nuclear industry with mechanical/electrical engineering, fabrication, machining, assembly, and testing services. Products include automated material handling equipment, code-compliant lifting beams, pressure vessels, gloveboxes, and automated control systems

Waste Control Specialists

Dallas, TX (Booth 542)

Low Level Radioactive Waste (LLRW) disposal has entered a new era in the United States. The state-of-art Texas Compact Waste Facility (CWF) is now open in Andrews, Texas, providing a safe, secure, permanent solution to your class A, B & C disposal needs. Owned by the state of Texas, and operated by Waste Control Specialists, the CWF is available to generators of commercial LLRW. For more information please visit us at booth #542 or our website at: wcstexas.com.

Westinghouse Electric Company

Cranberry Township, PA (Booths 306 & 308)

Westinghouse Electric Company is the only company with a single focus on nuclear power, providing a wide range of nuclear plant products and services to utilities throughout the world. Our nearly 14,000 employees worldwide provide fuel, spent fuel management, service and maintenance, instrumentation and control, and advanced nuclear plant designs. With the world's largest base of installed plants, no company has more nuclear experience.

The Westwind Group, Inc.

Wilmington, NC (Booth 136)

The Westwind Group, Inc. is a multifaceted consulting firm specializing in selection, training and performance support solutions, information and learning content management solutions, leadership development, and management support. Our mission is to equip our clients with solutions that measurably contribute to productivity in the workplace

Williams Industrial Services Group, LLC

Tucker, GA (Booth 201)

Williams Industrial Services Group, LLC (Williams) is a family of companies providing a comprehensive range of industrial maintenance, modification and construction services to Power Generation, Pulp and Paper, Chemical, Refining, Manufacturing and other industrial markets.

Williams, founded in 1958, has been safely upgrading, uprating, maintaining, modifying, and improving the material condition of commercial nuclear power plants in the United States since 1970. We offer a complete range of services including general maintenance/ modification and specialty services such as coatings application, insulation, asbestos and lead abatement, roofing, valve maintenance and repair, staff augmentation, and other key services. Williams has completed many major projects such as Extended Power Uprate (EPU) projects and 10 CFR 73.55 security upgrades under all types of contracting models, including target price and firm fixed price. We pride ourselves on having one of the best safety performance records in the industry.

In summary, Williams helps nuclear power plant owners enhance the value of their generating assets by facilitating safe and efficient extended operations.

Wolverine Fire Protection Co.

Mount Morris, MI (Booth 134)

Since 1958, Wolverine Fire Protection Co. has been committed to the preservation of life and property through the design, installation, maintenance, and service of fire protection sprinkler and alarm systems.

Zachry Nuclear Engineering, Inc.

Stonington, CT (Booth 408)

Zachry Nuclear Engineering, Inc. and our Numerical Applications Division is a full service engineering firm that provides Engineering, Analysis, Design, and Project Management services to the Nuclear Power Industry. Zachry Nuclear Engineering offers the services of experienced mechanical, electrical, controls, civil and structural engineering professionals and designers who are skilled in power plant systems, engineering analysis, including GOTHIC™, RELAP, RETRAN, RADTRAD-NAI™, and CentralStor™, as well as modification package development. Zachry Nuclear Engineering has offices in Stonington, Connecticut; Chicago, Illinois; Charlotte, North Carolina; Cary, North Carolina; and Richland, Washington. For more information please visit www.zhi.com and www.numerical.com for information on GOTHIC, RADTRAD-NAI, CentralStor.

2013 UWC Golf Tournament: Sunday, August 11, 2013

GENERAL INFORMATION

The ANS Utility Working Conference (UWC) Golf Tournament will be held at The Diplomat Golf Resort. The UWC Golf Tournament is open to all conference attendees; you must be registered for the conference. Players from sponsoring organizations of the golf tournament are also expected to register and pay the appropriate fees to participate in the tournament. The tournament will begin at 8:00 a.m. on Sunday, August 11, 2013.

TRANSPORTATION

The Diplomat Golf Resort is located approximately 8 blocks from the Westin Diplomat Resort and Spa. For those of you who do not have a vehicle, ANS has arranged for a shuttle service to the Diplomat Golf Resort from the Westin Diplomat Resort and Spa. Shuttle service will begin at 7:00 a.m. and continue until approximately 7:45 a.m. The shuttle bus will pick-up and drop off at the Diplomat Convention Center Lower Lobby. The shuttle will also return golfers to the Westin Diplomat Resort and Spa following the UWC Golf Tournament Awards Luncheon.

Please keep in mind that the UWC Golf Tournament will begin promptly at 8:00 a.m. so please make sure that you arrive at the Diplomat Golf Resort on time.

FORMAT

The format of the tournament will be Captains Choice or Super Ball. With this format, each player will hit his or her drive. You select the best shot and everyone plays their next shot from that location. You continue this until the ball is holed out. We will make every attempt to have the teams paired to keep the scores as close as possible. If you have someone that you wish to play with, please include the name of that golfer on your return email to Sid Sarver.

CANCELLATIONS

If you are unable to participate in the golf tournament after you have registered, please contact Sid Sarver at tsarver@ec.rr.com and the ANS Registrar at registrar@ans.org, immediately. Refunds will be issued until the registration deadline of Friday, July 12, 2012. After that date, you may send a substitute. Absolutely no refunds will be issued after July 12, 2013.

2013 Utility Working Conference Golf Tournament Sponsors

AMERICAN CRANE & EQUIPMENT CORPORATION

1 foursome

AREVA

1 foursome

AUTOMATED ENGINEERING SERVICES

2 foursome

THE BABCOCK & WILCOX COMPANY

2 foursomes

BECHTEL POWER CORPORATION

2 foursomes

BLACK & VEATCH

1 foursome

FLOWERVE FLOW SOLUTIONS GROUP (FSG)

1 foursome

INVENSYS

*Sponsor of the
Golf Tournament Awards Luncheon*

NUCLEAR SAFETY ASSOCIATES

2 foursomes

SCOTTMADDEN, INC.

2 foursomes

SYSTEM ONE

*1 foursome
and Sponsor of the "Grab and Go Breakfast"*

WESTINGHOUSE/PCI ENERGY SERVICES

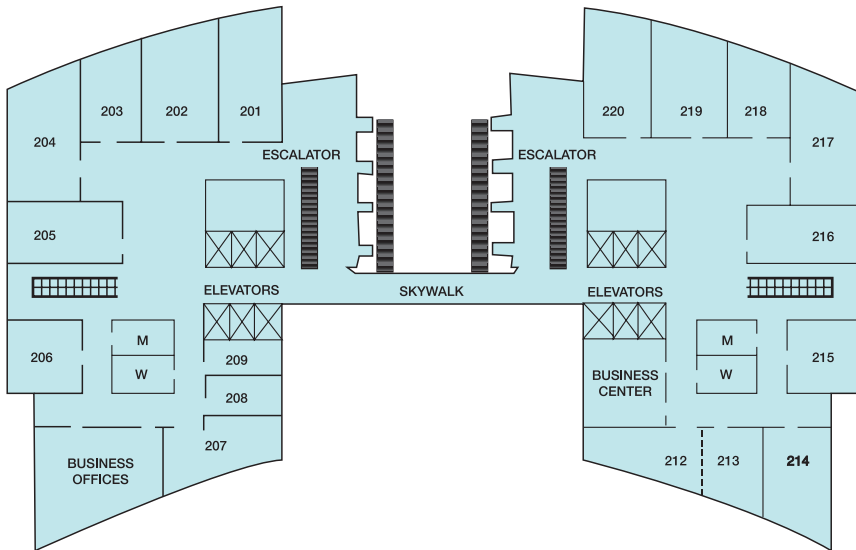
1 foursome

ZACHRY NUCLEAR ENGINEERING, INC.

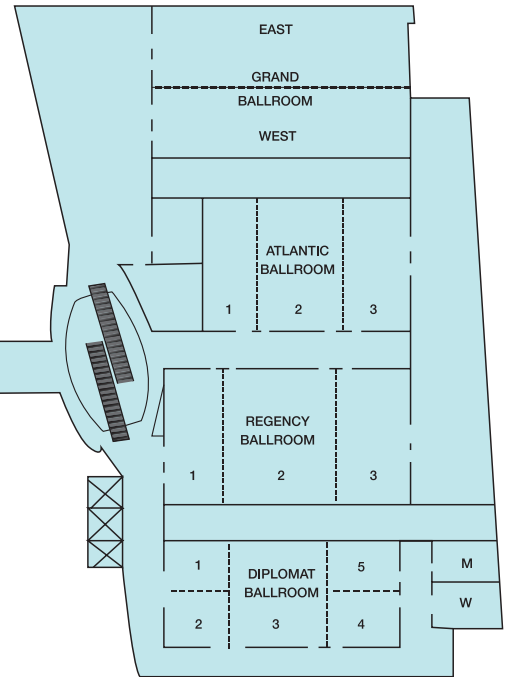
2 foursomes

WESTIN DIPLOMAT HOLLYWOOD, FL

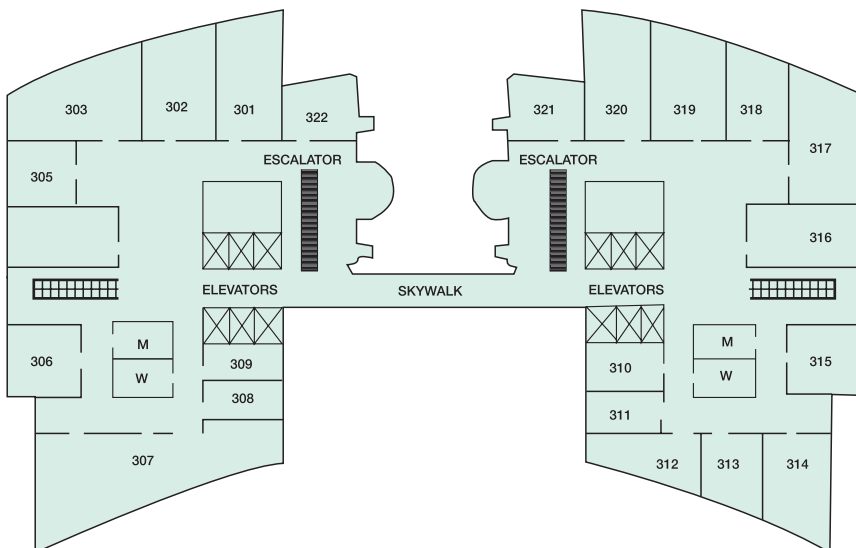
RESORT SECOND FLOOR



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