

July 11, 2014

MEMORANDUM TO: Edward H. Roach, Chief  
Mechanical Vendor Inspection Branch  
Division of Construction Inspection  
and Operational Programs  
Office of New Reactors

FROM: Raju B. Patel, Reactor Operations Engineer */RA/*  
Mechanical Vendor Inspection Branch  
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Office of New Reactors

SUBJECT: SUMMARY OF THE NUCLEAR REGULATORY COMMISSION  
WORKSHOP ON VENDOR OVERSIGHT

On June 12, 2014, the Office of New Reactors (NRO), Division of Construction Inspection and Operational Programs (DCIP), hosted the Nuclear Regulatory Commission (NRC) Workshop on Vendor Oversight in Portland, Oregon. This workshop followed the Nuclear Procurement Issues Committee (NUPIC) vendor meeting to enable maximum participation by suppliers to the nuclear industry. The NRC Vendor Workshop included a keynote address by Commissioner Svinicki, as well as presentations by members of the NRC staff, NUPIC, the Nuclear Energy Institute (NEI), the Electric Power Research Institute (EPRI), Korean Institute of Nuclear Safety (KINS), Korea Hydro & Nuclear Power Co., Ltd, two new reactor licensees, and six nuclear vendors. This was the 4<sup>th</sup> Workshop on Vendor Oversight.

The Workshop on Vendor Oversight included Plenary discussions on such issues as supplier oversight challenges for new reactor construction, chilled environment lessons learned, Multinational Design Evaluation Program (MDEP), Vendor Inspection Cooperation Working Group (VICWG) International Oversight, and proposed changes to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance." The workshop also included three break-out sessions on topics such as the use of International Laboratory Accreditation Cooperation (ILAC) Process, establishing similarities to previously qualified equipment, comparison between the American Society of Mechanical Engineers Section III, Subsection NCA-3855.5, Utilization of Unqualified Source Material vs. commercial grade dedication (CGD), CGD of software, EPRI dedication document revision, CGD of complex equipment, oversight of suppliers and sub-suppliers, Korean industry perspective on Counterfeit, Fraudulent, or Suspect Items (CFSI), and NUPIC supplier oversight challenges.

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The audience included approximately 467 attendees representing companies and organizations from 14 countries including vendors, industry groups, government regulatory agencies, and both foreign and domestic utilities.

A list of attendees is provided in Enclosure 1. The list of speakers is provided in Enclosure 2. All presentations are available in the NRC's Agencywide Documents Access and Management System (ADAMS) at accession numbers ML14150A473 and ML14156A347.

### Morning Plenary Session

Mr. Edward Roach, Chief, Mechanical Vendor Inspection Branch (MVIB), moderated the session, gave opening remarks, and introduced the speakers of the plenary session. A telephone bridge line was available to remote attendees.

Mr. Michael Cheok, Director, NRO/DCIP, welcomed the attendees of the 2014 Workshop and provided remarks about the responsibilities associated with the licenses oversight of vendors. He discussed the importance of communication among stakeholders like NUPIC, EPRI, etc., and indicated that these stakeholders have the resources to deal with the majority of the vendors getting involved with the nuclear industry. He also explained the importance of our communications and involvement with NUPIC and how these collaborations assist the NRC in obtaining information about vendors that are not performing satisfactory. No questions were received over the telephone bridge line.

Commissioner Kristine L. Svinicki, Commissioner, provided the keynote speech to the attendees about the important role the vendors play in the nuclear industry. No questions were received over the telephone bridge line.

Mr. Thomas Saunders, Director of Supplier Compliance, Southern Nuclear Operating Company at Vogtle Units 3 & 4, and Mr. Kevin Guyton, Supervisor of Supplier Quality Oversight, South Carolina Energy & Gas, presented the latest updates in construction at the Vogtle Units 3 & 4 and the Virgil C. Summer Units 2 & 3. Their presentations included project timelines, pictures of Module CA20 (Auxiliary building Module) and a discussion regarding the challenges faced during movements of the modules to the site and the associated storage space shortage for these modules at the site. They also explained the importance of NUREG-1055, "Improving Quality and the Assurance of Quality in the Design and Construction of Nuclear Power Plants: A Report to Congress." They recommended reading and understanding it. No questions were received over the telephone bridge line.

Mr. Michael Annacone, Vice President Nuclear Safety Power, Chicago Bridge & Iron (CB&I) Power Group, presented lessons learned from the receipt of the safety culture working environment chilled environment letter and the Order from the NRC, and explained what steps CB&I have taken since receipt. Mr. Annacone explained how they had performed an extent of condition and the results that came out of that effort. He also explained how useful the development of CB&I management tools were in helping them to identify similar issues to those addressed in the NRC Order. Mr. Annacone also explained that constant communication with clients was found to be one of the most helpful methods. As part of the corrective actions, CB&I created working groups that included representation from their client. No questions were received over the telephone bridge line.

Mr. Richard Rasmussen, Chief, Electrical Vendor Inspection Branch (EVIB), provided a presentation on the MDEP VICWG and explained the objectives of MDEP as a multinational initiative in developing innovative approaches to leverage the resources and knowledge of the international regulatory authorities who are currently dealing with new reactor power plant designs and construction. Mr. Rasmussen discussed the MDEP structure and explained the process associated with becoming a member of MDEP, which is currently comprised of 13 countries' nuclear regulatory authorities. During the presentation, Mr. Rasmussen discussed that the purpose and scope of the MDEP VICWG is to develop the logistics of conducting multinational vendor inspections. Mr. Rasmussen stated that NRC will be hosting the first pilot multinational inspection at Valinox Nucléaire, July 2014. No questions were received over the telephone bridge line.

Mr. Victor Hall, Reactor Operations Engineer, Quality Assurance Vendor Inspection Branch (QVIB), provided an update of the proposed 10 CFR Part 21 rulemaking. Mr. Hall discussed several examples of what the staff is proposing to clarify the current language in Part 21. Also, Mr. Hall presented a proposed new section to the regulation § 21.71, "Commercial Grade Dedication." The new draft section of the regulation will include to the definition and requirements of CGD. Mr. Hall explained that this proposed rule will be submitted as part of the rule making and he invited the public to become active participants of the process. No questions were received over the telephone bridge line.

The afternoon included three tracks with different topics as discussed below:

#### Track 1: ILAC & Commercial Grade Dedication Session

Mr. Richard McIntyre, Senior Reactor Operations Engineer, MVIB, moderated the session, provided opening remarks, and introduced the panel of speakers for the session. A telephone bridge line was available to remote attendees.

#### Use of International Laboratory Accreditation Cooperation Process

Mr. Yamir Diaz-Castillo, Reactor Operations Engineer, MVIB, and Mr. Marcus Nichol, Senior Project Manager, NEI led a presentation focused on the ILAC agreement and the future activities related to its' review and acceptance. Mr. Diaz-Castillo's presentation gave a history of qualifying calibration services, as well as the NRC's acceptance process and expectations for ILAC. His presentation continued to send a key message: until ILAC accreditation is accepted (NEI document 14-05 submittal acceptance), CGD is required for calibration services that will be used in safety-related applications. Mr. Diaz-Castillo described the status of NEI's action plan to assess the ILAC process and the benefits of NEI facilitating this process. He also discussed the goal of expanding the ILAC process to cover international testing and calibration facilities at some point in the future. Both speakers received questions related to the dedication of calibration services, the timeline of the NRC's review of the NEI document, and the differences in dedication versus procurement of safety-related calibration services. No questions were received over the telephone bridge line.

### Establishing Similarity in Previously Qualified Equipment Session

Mr. Jeffery Jacobson, Senior Reactor Operations Engineer, EVIB, discussed the challenges associated with qualifying replacement components including issues associated with demonstrating similarity to previously qualified equipment. He focused on examples of different procurement strategies and likely sources of components. Mr. Jacobson received several questions on various aspects of establishing similarity which were answered during the question and answer session. No questions were received over the telephone bridge line.

### ASME NCA 3855.5 "Utilization of Unqualified Source Material" vs. Commercial Grade Dedication

Mr. Doug Vickery, Director of Quality, Dubose National Energy Services, Inc. and Annemarie Appleton, Vice President, Manufacturing/Quality Alloy Stainless Products Company, Inc., focused on the CGD of specific components compared to the process accepted under ASME NCA-3855.5, "Utilization of Unqualified Source Material." Mr. Vickery's presentation included a range of applications, examples of typical ASME characteristics and acceptance criteria, and the importance of identifying the safety function. Mrs. Appleton discussed the acceptance and testing process, comparing material specifications and critical characteristics as well as necessary sample size. Mrs. Appleton and Mr. Vickery received and answered questions on ASME code requirements, certified material testing reports, and the authenticity of components / materials. No questions were received over the telephone bridge line.

### Track 2: Commercial Grade Dedication

Mr. Paul Prescott, Senior Reactor Operations Engineer, QVIB, moderated the session, provided opening remarks, introduced the panel of speakers for the session, and coordinated session questions. A telephone bridge line was available to remote attendees.

### Commercial Grade Dedication of Software

Mr. George Lipscomb, Electrical Engineer, EVIB, presented the NRC's perspective on the CGD of software with an emphasis on design and analysis software. He covered the high level regulatory background for software quality assurance (QA), and provided information on the related regulatory requirements, guidance documents, and NRC expectations for control of design and analysis software. He discussed Revision 1 of EPRI Technical Report 1025243, "Plant Engineering: Guideline for the Acceptance of Commercial Grade Design and Analysis Computer Programs used in Nuclear Safety-Related Applications," and the proposed NRC Draft Regulatory Guide 1305. Mr. Lipscomb also answered various questions on software quality controls. No questions were received over the telephone bridge line.

### Electric Power Research Institute (EPRI) Dedication Document Revision

Mr. Marc Tannenbaum, Project Manager, EPRI, discussed current commercial grade item dedication guidance revision. His presentation included various aspects of Revision 1 of EPRI 3002002982, "Guideline for the Acceptance of Commercial-Grade Items in Nuclear Safety-Related Applications," which will supersede EPRI NP-5652, "Guideline for the Utilization of Commercial Grade Items in Nuclear Safety Related Applications," and EPRI TR-102260, "Supplemental Guidance for the Application of EPRI Report NP-5652 on the Utilization of

Commercial Grade Items.” He provided background for the revision and discussed the format and various sections of the guidance. Mr. Tannenbaum also answered questions on CGD methodology and documentation. No questions were received over the telephone bridge line.

#### Commercial Grade Dedication of Complex Department of Energy Equipment

Mr. Chris Hartz, Procurement Engineering Manager, Bechtel National, Inc., discussed the Department of Energy (DOE) Waste Treatment Plant (WTP) Project as an example of complex equipment CGD. His presentation included an overview of the project, the differences between DOE and NRC safety classifications, common CGD strategies and references, and challenges with CGD of complex equipment. Mr. Hartz also discussed a case study for the WTP Emergency Turbine Generator dedication and answered questions of the CGD approach and case study. No questions were received over the telephone bridge line.

#### Track 3: Supplier Oversight Challenges Session

Mr. Greg Galletti, Senior Reactor Operations Engineer, EVIB, moderated the session, provided opening remarks, and introduced the panel of speakers for the session. A telephone bridge line was available to remote attendees.

#### Oversight of Suppliers & Sub-Suppliers

Mr. Richard Kuntz, QA Manager, SPX Copes-Vulcan, presented a vendor perspective on supplier oversight and oversight of sub-suppliers. His presentation gave an overview of some of the challenges faced by SPX Copes-Vulcan, and offered the following five lessons learned:

- Be cautious of oversight complacency with long-term vendors.
- Conduct random vendor site visits; have a plan, make a record.
- Conduct in person contract review with vendors.
- Vendors changing commodity/scope require enhanced oversight.
- Conduct source inspections during vendor inspection activities.

No questions were received over the telephone bridge line.

#### Korean Industry Perspective on Counterfeit, Fraudulent, & Suspect Items

Mr. Sang-Jong Lee, General Manager of the Contractor Quality Verification Team, Korea Hydro Nuclear Power, and Mr. Hyunsop Chang, KINS, offered the Korean Industry Perspective on CFSI. Mr. Lee and Mr. Chang shared the respective industry and regulator experiences in dealing with CFSI issues identified in Korea in 2012. Their presentations offered a history of the events, actions taken by their organizations, lessons learned, and the current status of Korea’s approach to dealing with CFSI. No questions were received over the telephone bridge line.

#### Nuclear Procurement Issues Committee Supplier Oversight Challenges

Mr. John Larson, Chairman, NUPIC Vendor Interface, presented views on supplier oversight challenges focused in three areas: 1) Tenure - Knowledge and experience retention; 2) Treasure - The cost of quality, and; 3) Technology - “Virtual” Oversight. Mr. Larson answered

questions on topics including NUPIC's oversight, pooling of audit and oversight resources. No questions were received over the telephone bridge line.

### Afternoon Plenary Session

Mr. Edward Roach, Chief, MVIB, provided closing remarks and opened the floor for questions to be answered by the panelists table. Several questions were received and answered during this session. A telephone bridge line was available to remote attendees. No questions were received over the telephone bridge line.

### Summary and Conclusions

Several key messages were developed from the interactions during the workshop:

- Rigorous vendor oversight is crucial to maintaining the integrity of the global supply chain and nuclear safety. This oversight should start with you and your customers;
- A robust and positive Safety Culture promotes quality in the global supply chain;
- Comprehension and compliance with codes, standards, and quality requirements forms a foundation to the work you carry out, and;
- Vigilance is key in preventing the entry of counterfeit, fraudulent, and suspect items into the global supply chain.
- The licensee is ultimately responsible for quality.

Consistent with the first, second, and third vendor workshops, the NRC staff received over 100 questions throughout the day, responding to all of these during the designated question and answer portions of each session, as well as the final plenary session at the close of the workshop. At this time, the NRC staff is not planning to provide additional written responses to these answered questions on the public website. Interested parties who would like further clarification on any of the topics discussed during the workshop are encouraged to utilize the Frequently Asked Questions section of the NRC public website, or to contact Raju Patel at [raju.patel@nrc.gov](mailto:raju.patel@nrc.gov) to solicit more detailed responses.

In an effort to enhance the next vendor workshop, the NRC solicited suggestions from the attendees. The NRC included a solicitation for suggested topics at future workshops in the workshop program. NRC Public Meeting Feedback forms were also distributed to attendees, and numerous public meeting feedback forms were received at the close of the workshop. The general consensus was that the attendees appreciated the NRC being proactive in explaining its regulations and expectations for nuclear vendors. In addition, the attendees expressed interest in the NRC's continued conduct of similar outreach activities and suggested that the NRC continue to coordinate its workshop with the annual NUPIC Vendor Meeting. Additional feedback forms are expected by mail. These feedback forms will be used to improve future vendor workshops and to focus on the appropriate topics at the workshops.

E. Roach

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In summary, the workshop brought together regulated utilities, government agencies, nuclear component vendors, and other interested stakeholders to discuss such issues as vendor oversight for new construction; safety culture; CGD; software QA; and CFSI.

Enclosures:

1. List of Attendees
2. List of Speaker





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Enclosures:

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- 2. List of Speaker

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<b>DATE</b>	07/11/2014	07/11/2014	

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## **NRC Workshop on Vendor Oversight for New Reactor Construction Mailing List**

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**NRC Workshop on Vendor Oversight**  
**June 12, 2014**

**Attendee List**

<b>First Name</b>	<b>Last Name</b>	<b>Affiliation</b>
Paul	Abens	Emerson / Fisher Controls
Ken	Adams	Oregon Iron Works, Inc.,
Thomas	Agonis	Prospect Assistance Corp.
Christopher M.	Alar	Super Radiator Coils
Maria	Alexander	Shaw Areva MOX Services
Carmen	Alonso	GE-Hitachi
Katrina	Anderson	AECOM
Roger	Anderson	Ringhals AB a Vattenfall Company
Mike	Annacone	Chicago Bridge & Iron (CB&I)
Annemarie	Appleton	Alloy Stainless Products Company Inc.
Kelly	Armstrong	Edgen Murray
Kevin	Armstrong	Automatic Valve
Carol	Arneson	Konecranes
Greg	Arnold	Oregon Iron Works
David	Arrigo	Westinghouse Electric Company LLC
Andrew	Atwood	Westinghouse Electric Company
Bruce	Bader	RCM Technologies
George	Baitinger	Fisher Controls International LLC
Edward	Baker	TalismanInt
Richard	Balamut	NSL Analytical Services, Inc.
Charles	Baldrige	Wolf Creek Nuclear Operating Corp.
Christina	Banks	GE Hitachi Nuclear
Garrett	Banton	SULZER
Eva	Barg	ETN-Electronics Electronuclear
Orie	Barnes	Transco Products Inc.
Rebecca	Baumgartner	Lincoln Structural Solutions
Jeff	Baysinger	Tampa Armature Works
Gary	Becker	NuScale Power LLC
Tina	Benac	IMI Nuclear
Tom	Bergman	NuScale Power, LLC
Shamsher	Beri	PGE Trojan Plant
Scott	Berman	Ultra Electronics, Nuclear Sensors & Process Instrumentation



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Jim	Bohlman	SULZER
Tracy	Bolt	AZZ/Nuclear Logistics Inc.
Kelsey	Bondelid	Edgen Murray
Kevin	Bonser	General Atomics
Bradley David	Boothe	Acvity Quality Assurance
Candice Lee	Boothe	Acvity Quality Assurance
Scott	Borland	HydroAire Services, Inc.
Deborah	Borland	Global Quality Assurance, Inc. (GQA)
Ray	Bowen	Flowserve - Springville
Matthew	Bowman	ATC Nuclear
Jill	Brandt	Fauske & Associates, LLC
Mike	Brasel	NuScale Power, LLC
David	Breneman	Dominion
Tom	Brewington	National Technical Systems (NTS)
Joseph	Brodeur	BURNDY LLC
Kenvin	Broussard	Engine Systems
David	Brown	ABB, Inc.
Charles	Brown	PPL Susquehanna, LLC
William	Bryan	ANSYS, Inc.
Kevin	Buckley	Exelon Generation
Gloria	Buie	Sotuthern Company
Robert	Bunz	Omaha Public Power, Fort Calhoun Nuclear Station
Mathew	Burke	Premier Technology, Inc.
Fletcher	Burton	Anderson Burton Construction, Inc.
Wesley	Bushby	Whiting Corporation
Adam	Caban	Irmo Industrial Services
Graham	Callaway	NuScale Power, LLC
Paul	Campbell	AT&F Nuclear, Inc.
Tom	Cannon	Bruce Power LP
John	Carlson	TAW
Terrance	Carraher	LMT
Terry	Casteel	Toshiba America Nuclear Energy Corporation
Jeff	Cederberg	Oregon Iron Works
Bradley	Cellier	Kinetix Quality Services
Hyunsop	Chang	Korea Institute of Nuclear Safety
Chuan-Chung	Chen	Taiwan Power Company
Michael	Cheok	US NRC
Vince	Chermak	The I&C Division of Scientech, a Business Unit of Curtiss-Wright
Rick	Chester	B&W -- Y-12
Tom	Childress	Project Assistance Corp.

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Susan	Collie	Amsden's Consulting Services
Milton	Concepcion	ATC Nuclear
Mark	Coren	Duke Energy
Jonathan	Cornelius	TE Connectivity (formerly Raychem Corp)
Sarah	Costello	LPI
Sheila	Cowley	Flowserve (Raleigh)
Glenn	Craig	AMEC
Stephen	Cramb	Garlock
Rocky	Crisp	Energy Solutions
Bill	Crittendon	Oregon Iron Works
Vaughn	Curcio	Westinghouse Electric Company
Tim	Czuba	
Patrick	Daly	
Jim	Davis	US Department of Energy
Glenn	Davis	Sherwin-Williams Co.
Spencer	Daw	Green Berry Industrial
Eric	Deal	Flanders Corporation
John	DeBonis	Curtiss Wright / Target Rock
Jeffrey	Deeds	Energy Solutions
Jeffrey	DeFebo	PSEG Nuclear, LLC
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Rene A.	Delaney	LPI Inc.
Sandra	Delvin	Electric Power Research Institute
Eric	Desgagne	Canadian Nuclear Safety Commission
John	Detandt	James C. White Company, Inc.
Tom	DeVincentis	Archon Engineering, PC
Yamir	Diaz-Castillo	US NRC
Richard	DiLorenzo	The Okonite Company
Melanie	Dirks	SOR Incorporated
Gary	Donnell	Conval
Wesley	Dotson	Sequoia Consulting Group
Shami	Dua	ENEC
Michael	Dunkelberger	MPR Associates
Richard	Dunkin	Southern Nuclear
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Jordan	Gaspan	Energysys
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Steven	George	DP Engineering
A. Bruce	Giles	Arizona Public Service
Brian	Gilmartin	DRS Technologies, Consolidated Controls, Inc.
Alex	Giurgiuman	NuScale Power
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Dwayne	Goche	Energy Northwest
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Joseph	Gonyeau	JA Gonyeau
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Kevin	Guyton	SCE&G
Faezeh	Haddad	TE Connectivity
Bruce	Haley	Presray
Victor	Hall	US NRC
Steve	Hamilton	Westinghouse Electric
Joyce	Hamman	Crane Nuclear, Inc.
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Brian	Hendel	Energy Northwest
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John	Hendricks	Mesa Associates, Inc.
Douglas	Henry	Westinghouse
Cheryl	Hensley	ASCO Valve Manufacturing LLC
Gerri	Hercik	AEP/ D.C. Cook Nuclear Plant
James	Highlands	MSA
Thomas	Hiltz	US Department of Energy
Sasajima	Hiroyuki	Toshiba Corporation
Charlie	Holman	AREVA
Thomas	Horan	Hilti, Inc.
Michael	Howard	TVA
Darryl	Howe	LMT, a business unit of Curtiss Wright Flow Control
Justin	Hubbard	Kinectrics Inc.
Dean	Hudson	Oregon Iron Works
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Amie	Humphrey Facendola	Alden Research Laboratory

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Raj	Jolly	Bechtel Power Corporation
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Scott	Jones	Fisher Controls International
Duska	Jovicic	NEK
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Jonathan	Keklak	CB&I/CPSG
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C Michael	Kelley	Fluor-Daniels
Nicholas	Kerr	Kirby Engine System
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Yongchul	Kim	Doosan Heavy Industries & Construction
Russell	Kinnunen	Progressive Development group
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Danielle	Kottas	Lincoln Structural Solutions
Sonia	Kousha	NuScale Power LLC
Terry	Krause	Burns & McDonnell
William	Kulas	DRS, Consolidated Controls Inc.
Richard	Kuntz	SPX Corporation Copes-Vulcan Operation
Makoto	Kuramochi	Toshiba Corporation
John	Kurtik	Westinghouse Electric Company
Randall	Kurtz	Sargent & Lundy
Osamu	Kuwano	Toshiba America Nuclear Energy
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Joseph	Lasko	Westinghouse Electric Company

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Thomas	Lippucci	Swagelok
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Mabel	Loo	Cameron International
Korina	Looft	United Controls International (UCI)
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Debra	Loudenslager	Duke Energy
John	Louwers	DTE Energy
Jon	Lubahn	Consumers Energy Laboratory Services
Lori	Lubic	Westinghouse
William	Luka	Steel Industries Inc.
Per-Olof	Lund	Sandvik
Steven	Lusk	TVA - Tennessee Valley Authority
Joseph	Macel	EPICOR, Inc.
Jose	Magachaes	Nexter Energy
Jarno	Makkonen	Sulzer Pumps (US) Inc.
Terence	Malloy	ABB
Ted	Manning	Worley Parsons
MICKY	MANOLESCU	BHI / WELDTECH SERVICES
Cathy	Mansfield	Applied Technical Services, Inc.
Alex	Manuk	Trust Manufacturing, LLC
RAUL	MARCOS	EQUIPOS NUCLEARES, S.A.
Robert	Marshall	NuScale Power, LLC
John	Martin	AMEC Environment and Infrastructure, Inc.
Brian	Matthews	NuScale Power
Mark	Maurer	Flowserve US Inc. Vernon Operations
Herbert	Mayes	Southern Company
Earl	Mayhorn	Ameren
Tom	Mc Cann	Konecranes Nuclear
Adam	McCartney	Cameron
Jonathan	McCauley	Flowserve Corp.
Rebecca	McClellan	Premier Technology, Inc.
Michael	McEssey	J.F. Ahern Co.

<b>First Name</b>	<b>Last Name</b>	<b>Affiliation</b>
Glennis	McNeish	AREVA Inc.
Wilbert	Meadows	Flowserve, Raleigh
Kennith	Mechals	Free Lancer
Alfred	Medina	URENCO USA
Dan	Meisch	Weldstar
Cecil	Melendez	ASCO
Brian	Mervak	South Carolina Electric & Gas
John	Mikach	Homewood Energy Services
Alex	Millar	Mirion Technologies (IST Canada) Inc
Lloyd	Mills	Greenberry Industrial
Mark	Milo	Mitsubishi Nuclear Energy Systems, Inc.
Andrey	Miroshnichenko	The Electric materials
Frank	Mischler	Hitachi America, Ltd.
Stanley	Mitchell	Exelon
Morris	Mitchell	MHI
Craig	Mizer	Swagelok Company
Travis	Moerer	Wolf Creek Nuclear
John	Mohr	B&W Power Inc.
Darly	Montie	Arsenal Consulting, Inc.
James M.	Moon	Energy Northwest
Donna	Mullaly	Technology for Energy Corporation
Marie	Mullins	B&W Power Inc.
Samuel	Mummert	Tioga Pipe
Hasan	Mutlu	TE Connectivity
Rosalie	Nava	Crane Nuclear Inc.
Tony	Newara	Electric Materials Co.
Marc	Nichol	NEI
Cheree	Nichols	Lockheed Martin
Bruce	Norton	NTD Consulting Group, LLC
Hitoshi	Ochi	JAPAN NUS., LTD.
Richard	Oehlberg	Oehlberg Consulting
Ronald	Ogle	Fluid Components International LLC
Kosuke	Oido	IHI Corporation
Patrick	Olson	Twin City Fan Companies, LTD.
Jonathan	Ortega	US NRC
Ikuo	Otake	Mitsubishi Heavy Industries, Ltd.
Derek	Overcash	B&W Technical Services Y-12, LLC
Fernando	Pacheco	Thermo Fisher Scientific
Chris	Palmer	Oregon Iron Works
Jin-Young	Park	KHNP

<b>First Name</b>	<b>Last Name</b>	<b>Affiliation</b>
Jason	Parker	Superior Air Handling
Robert J.	Parrott	Mesa Associates, Inc.
Teri	Parrott	Sulzer Pumps (US) Inc.
Thomas	Paserba	International Quality Consultants, Inc.
RAJU	PATEL	US NRC
Robert	Paton	Energy Steel & Supply Co.
Travis	Peake	Technetics Group
Juan	Peralta	Westinghouse Electric Company
Gary	Peters	Gerdau
Duyen	Pham	Emerson / Rosemount Nuclear Instruments, Inc.
Scott	Phlieger	EnerSys
Al	Pitts	UniStar Nuclear Energy
Lisa	Plante	Westinghouse Electric Company LLC
Viorel	Popa	SNN-Romania
Jim	Powell	Technetics Group
Paul	Prescott	US NRC
Greg	Przyjemski	PPL Susquehanna, LLC
Alexis	Puerta	IMR KHA-Portland
Bob	Pullano	GEL Laboratories, LLC
Don	Queen	Energy Northwest
Shea	Radar	Holtec International
Glenn	Radmacher	SOR Incorporated
Jeffery	Rahming	Flowserve Corp.
Wesley	Ranard	Fisher Controls International LLC, Emerson Process Management
Adam	Rasmussen	NuScale Power, LLC
Richard	Rasmussen	US NRC
Jan	Reber	EnerSys
Lou	Reda	SSM Industries, Inc.
Edward	Reister	Greenberry Fabrication
Christopher	Replogle	Westinghouse
Randy	Reynolds	Switchgear Solutions Inc.
Kerry	Rhoads	Dominion
McIntyre	Richard	US NRC
Steven	Riddell	Owen Industries
Frances	Riley	Global Quality Assurance, Inc. (GQA)
Edward	Roach	US NRC
Guy	Robinson	Entergy
Erica W.	Rodel	Hayward Tyler
Michael	Rogers	NB Power

<b>First Name</b>	<b>Last Name</b>	<b>Affiliation</b>
Timothy	Rollason-Reese	Westinghouse Eclectic Co.
Michael	Ross	NuVision Engineering
William	Ross	EnerSys
Doug	Roszman	Hayward Tyler Inc
Joe	Roth	Southern Company/Georgia Power
Ian	Rugg	Kinetix Quality Services
Sean	Ruth	United Controls International
Robert	Rzepka	US NRC
Ron	Sacco	Black & Veatch
Alan	Sadeghi	AZZ / NLI
Toni	Sakadales	US NRC
Faisal	Salman	Hydro Inc.
Luis	Sanchez	United Controls International
Thomas	Saunders	Southern Company
Ron	Sayle	Superheat FGH
Guy	Scaggs	Instrument & Valve Services
Anthony	Scaia	Omaha Public Power District
Ernie	Schlangen	RCM Technologies
Joe	Schmidt	PPL Susquehanna, LLC
John	Schopper	Wolf Creek Nuclear Operating Corp.
E Reilly	Schum	National Technical Systems (NTS)
Walker	Scott	UD DOE
Glen	Seier	Omaha Public Power District
Del	Senner	Energy Northwest
Nick	Serafin	Consumers Energy / Laboratory Services
Patrick	Shaw	Rotork Controls Inc
John	Sheffield	Exelon Nuclear
Ken	Shepherd	Global Quality Assurance, Inc. (GQA)
Michael	Sherwin	Curtiss Wright
John	Simmons	Luminant Power
Brandon	Simmons	Mirion Technologies (IST) Corp.
Roger	Sims	Hughes Associates, Inc.
Phillip	Sllivan	STPNOC
Randall	Slomski	Flowserve
Lisa	Smith	Tioga Pipe Supply
Richard	Smith	ERA, Inc.
William	Smoot	Northwinds DOE
Thomas	Smouse	General Contractor
Jennifer	Snead	Duke Energy
Dennis	Snow	Xylen INC.

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Mark	Solomon	PPL Susquehanna LLC
David	Soward	Xcel Energy
Marikay	Speckert	Carboline Company
Dave	Spehar	Pennatronics
Jerry	Standridge	Duke Energy
Edward	Stankiewicz	Joseph Oat Corporation
Marlo	Stapleton	Green Berry Industrial
Fran	Starr	AREVA Inc.
Thomas	Stomberski	Schneider Electric Gutor Technology
William	Stone	Arizona Public Service
Kevin	Stovall	ARES Corporation
Tracie	Straalsund	Mid Columbia Engineering
Michael	Sturtevant	Energy Northwest
Brian D.	Sullivan	Weir Valves & Controls USA Inc.
Kristine	Svinicki	US NRC
Robert	Sweeney	IBEX
Miroslaw	Swirad	Valcor Engineering Corp
Les	Taggart	AREVA Inc.
Masaya	Takatsugu	Mitsubishi Heavy Industries, Ltd
Burt	Tanaka	Fluid Components International LLC
Marc	Tannenbaum	Electric Power Research Institute
Robert	Thompson	FirstEnergy Nuclear Operating Co.
Jeremy	Timm	Curtiss-Wright
Kazuyuki	TOMODA	IHI Corporation
Gerald	Toole	Hirschfeld Industries
Olimpio	Torres	URENCO USA
Karla	True	Fairbanks Morse Engine
Michael	Turner	WCNOC
Andreas	Uebleis	Hilti Corporation
Mark	Van Dop	Palo Verde Nuclear Generating Station
Mike	VanCleave	NuScale Power
Robert	VanNorman	ATC Nuclear
Jeff	Verbie	Larson Forgings
Doug	Vickery	DuBose National Energy Services
Ed	Villalva	Flowserve Corp.
Richard	Von Roble	Von Roble Consulting
Hung	Vu	Ameren
Gunnar	Wald	Hilti Cooperation
Doug	Walker	Energy & Process Corp.
Melissa	Walters	Lockheed Martin

<b>First Name</b>	<b>Last Name</b>	<b>Affiliation</b>
Leslie	Ward	Rolls-Royce
William	Ware	Southern Nuclear Operating Co.
Art	Washburn P.E.	SULZER
Gene	Wasson	Exelon Generation
Dennis	Weaver	Greenberry Fabrication
John	Webb	Pentair Valves & Controls
Thomas	Webb	Chalmers and Kubeck
Michael	Wedemeyer	Emerson Process Mgt. / Fisher Valves
Michael	Weinstein	Scientech
Kent	Welter	NuScale Power
Ronald	Wessel	Westinghouse Electric Company
Bruce	Wheeler	NuSource, LLC
Kevin	Wheelright	Numerical Applications
Scott	Whited	Technology for Energy Corp
Ryan	Whitford	CB&I Lake Charles
Nicola	Willey	Electric Motor & Contracting Co, Inc
James	Williams	Dominion
Jeff	Williams	Southern Company
Tracy	Wills	URS Corporation
Abe	Winkle	Weldstar
John	Wisniewski	Sequoia Consulting Group
Ryann	Wittner	Free Lancer
Don	Wiwczar	Zachry Nuclear Engineering Inc.
Brian	Wolf	NuScale Power, LLC
Gerald	Woodson	H-Y Tech Mechanical & Construction Services
Robert	Wright	Entergy
Sarah	Yeagley	Archon Engineering, PC
Cemal	Yilmaz	Schneider Electric/ Guttor Electronic LLC
Kathryn	Yohn	ITT Engineered Valves
Todd	Young	AREVA TN
Sam	Yousif	Dynamic Solutions USA, Inc.
Frank	Yurich	American Crane & Equipment Corporation
Albert	Zaehner	CCI AG
Gary	Zink	STPNOC
Angela	Zubroski	Westinghouse Electric Company
Troy	Zuercher	PAC





**List of Speakers**

<b>Speaker</b>	<b>Affiliation</b>
Mike Cheok	U.S. Nuclear Regulatory Commission
Kristine Svinicki	U.S. Nuclear Regulatory Commission
Victor Hall	U.S. Nuclear Regulatory Commission
Yamir Diaz Castillo	U.S. Nuclear Regulatory Commission
George Lipscomb	U.S. Nuclear Regulatory Commission
Jeff Jacobson	U.S. Nuclear Regulatory Commission
Thomas Saunders	SNC
Kevin Guyton	SCE&G
Michael Annacone	CB&I Power
Marcus Nichol	NEI
Annemarie Appleton	ASP
Doug Vickery	Dubose National Energy Services, Inc.
Mark Tannenbaum	EPRI
Chris Hartz	Bechtel National Inc.
Richard Kuntz	SPX – Copes Vulcan
Sang-Jong Lee	KHNP
Hyunsop Chang	KINS
John Larson	NUPIC