

Conference on Nuclear Training and Education

CONTE 2019

A Biennial International Forum

Official Program







February 5–7, 2019 St. Augustine, FL World Golf Village, Renaissance St. Augustine Resort



ANS CONTE 2019 Conference on Nuclear Training and Education

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Meeting Officials

A Biennial International Forum

2019 Conference on Nuclear Training and Education



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Deborah Williams INPO

Jen Yunk Wolf Creek

Daily Schedule

Monday, February 4

5:00-8:00 pm Registration

6:30-8:00 pm Technology Expo 6:30-8:00 pm Opening Reception

Sponsored by:

Convention Registration Desk St. Augustine C/D St. Augustine C/D

Tuesday, February 5

7:00 am-4:00 pm	Registration	Convention Registration Desk
7:00 am-6:30 pm	Technology Expo	St. Augustine C/D
7:30-8:30 am	Breakfast in Technology Expo	St. Augustine C/D
8:30-9:30 am	Opening Plenary	St. Augustine A/B
9:30-9:45 am	AM Break in Technology Expo	St. Augustine C/D
	Sponsored by: ONTARIOPOWER GENERATION	
9:45-11:30 am	Technical Sessions	
	Maintenance and Technical Fundamentals	St. Augustine E
	• Training Technology, Innovative Methods or Simulations—I	St. Augustine F
	Engineering Education and Training	St. Augustine G
11:30 am-1:00 pm	Afternoon Plenary & Luncheon	St. Augustine A/B
	Sponsored by: DUKE ENERGY®	
1:00-2:45 pm	Technical Sessions	
	Accreditation Lessons Learned—I	St. Augustine E
	Leadership Development—I	St. Augustine F
	Nuclear Uniform Curriculum and College Partnerships	St. Augustine G
2:45-3:00 pm	PM Break in Technology Expo	St. Augustine C/D
	Sponsored by: ONTARIOPOWER GENERATION	
3:00-4:45 pm	Technical Sessions	
	Accreditation Lessons Learned—II	St. Augustine E
	New Builds/Training Lessons Learned	St. Augustine G
5:00-6:30 pm	Evening Reception	St. Augustine C/D
	Sponsored by: Westinghouse	

Exelon Generation。

Daily Schedule

Wednesday, February 6			
7:00 am-4:00 pm	Registration	Convention Registration Desk	
7:00 am-6:30 pm	Technology Expo	St. Augustine C/D	
7:00-8:00 am	Breakfast in Technology Expo	St. Augustine C/D	
8:00-9:45 am	Technical Sessions		
	 Industry Accreditation Evolution—Panel 	St. Augustine E	
	 Personnel Training and Qualification—I 	St. Augustine G	
9:45-10:00 am	AM Break in Technology Expo	St. Augustine C/D	
10:00-11:45 am	Technical Sessions		
	 Training Technology, Innovative Methods or Simulations—II 	St. Augustine E	
	• IAEA International Nuclear Management Academy (INMA) Master's		
	Programmes in Nuclear Technology Management (NTM)-Panel	St. Augustine F	
	Personnel Training and Qualification—II	St. Augustine G	
11:45 am-1:00 pm	Wednesday Plenary and Awards Luncheon	St. Augustine A/B	
	Sponsored by:		
1:00-2:45 pm	Technical Sessions		
	Operator Licensing and Training-Panel	St. Augustine E	
	 Training Technology, Innovative Methods or Simulations—III 	St. Augustine F	
	 Maintaining the Training Conscience, SAT Knowledge—I 	St. Augustine G	
2:45-3:00 pm	PM Break In Technology Expo	St. Augustine C/D	
3:00-4:55 pm	Technical Sessions		
	 Operations Fundamentals 	St. Augustine E	
	 Training Technology, Innovative Methods or Simulations—IV 	St. Augustine F	
5:00-6:30 pm	Evening Reception	St. Augustine C/D	
	Sponsored by: Entergy		

Thursday, February 7

7:00-10:00 am	Registration	Convention
		Registration Desk
7:00-8:00 am	Breakfast	St. Augustine Foyer
8:00-9:45 am	Technical Sessions	
	• Preparing the Nuclear Professional for a Life in a Cyber Secure World–Panel	St. Augustine E
	• Leadership Development—II	St. Augustine F
	Maintaining the Training Conscience, SAT Knowledge—II	St. Augustine G
9:45-10:00 am	AM Break	St. Augustine Foyer
10:00-11:45 am	Technical Sessions	
	Physical and Cyber Security in the Nuclear Sector-Panel	St. Augustine E
	Workforce Recruiting and Development	St. Augustine F
	Human Performance Improvement	St. Augustine G
11:45 am-1:00 pm	Closing Luncheon	St. Augustine A/B

General Information

MEETING INFORMATION

Conference on Nuclear Training and Education: A Biennial International Forum (CONTE 2019), February 5-7, 2019, to be held in St. Augustine, FL, has an emphasis on the future of the nuclear industry, and is aimed at training, education and workforce development.

Topics of interest include human performance, personnel training, cybersecurity, accreditation/international standards, workforce planning/recruiting/training, leadership, simulator/simulations, operator training, and much more. Come join us!

REGISTRATION

ANS Registration Desk is located in front of the Royal Melbourne Room. You may register, purchase additional tickets for events or pick-up your badge and registration materials during the hours listed below. Name badges must be worn during all technical sessions, in the technology expo and events. Certain events require a ticket/wristband and may entail an additional cost for guests or 1-Day registrants.

Location: Convention Registration Desk

Monday, February 4	5:00 pm – 8:00 pm
Tuesday, February 5	7:00 am - 4:00 pm
Wednesday, February 6	7:00 am - 4:00 pm
Thursday, February 7	7:00 am – 10:00 am

FREE MEETING WIFL

Network: Renaissance_CONF

Password: jaxbr

TECHNOLOGY EXPO & EXPO HOURS

Join us and visit with our exhibitors in the Technology Expo! Learn about new technology, products and services that are being offered. Receptions will be hosted in the Expo. For more information or to view the floorplan and exhibitors see page 18.

Location: St. Augustine C/D

Monday, February 4	6:30 pm - 8:00 pm
Tuesday, February 5	7:00 am - 6:30 pm
Wednesday February 6	7:00 am - 6:30 pm

ATTENDEE MEAL FUNCTIONS

Breakfast & Breaks will be provided to all registered meeting attendees, Tuesday – Wednesday in room St Augustine C/D and Thursday in the St. Augustine Foyer.

Lunch will be provided to all registered meeting attendees, Tuesday - Thursday. **Please note: Lunch is a ticketed event. Tickets are included with a full meeting registration or a ticket for the corresponding day for a 1-day registration. Additional tickets are available for purchase.

Opening Reception in the Expo: This reception is a ticketed event. Heavy hors d'oeuvre and beverage tickets are included with a full meeting registration. Additional tickets are available for purchase.

Tuesday & Wednesday Evening Receptions in the Technology Expo: These receptions are ticketed events. Heavy hors d'oeuvres and beverage tickets are included with a full meeting registration. Additional tickets are available for purchase.

General Information

ABOUT ANS

Mission

ANS provides its members with opportunities for professional development. It also serves the nuclear community by creating a forum for sharing information and advancements in technology, and by engaging the public and policymakers through communication outreach.

Statement on Diversity

The American Nuclear Society (ANS) is committed, in principle and in practice, to creating a diverse and welcoming environment for everyone interested in nuclear science and technology. Diversity means creating an environment – both in ANS and in the profession – in which all members are valued equitably for their skills and abilities and respected equally for their unique perspectives and experiences. Diverse backgrounds foster unique contributions and capabilities, and so creation of an inclusive Society ultimately leads to a more creative, effective, and technically respected Society.

ANS believes that everyone deserves opportunities for learning, networking, leadership, training, recognition, volunteering in Society activities, and all the other benefits that involvement in the Society brings, regardless of age, color, creed, disability, ethnicity, gender identity and expression, marital status, military service status, national origin, parental status, physical appearance, race, religion, sex, or sexual orientation. The selection of a member to serve in ANS's volunteer leadership structure shall be based solely on the member's ability, interest and commitment to serve. In particular, ANS encourages members at each level of the Society and in each Professional Division and Technical Group to make special efforts to recruit underrepresented minorities and women to ensure that they are adequately represented in the Society.

Respectful Behavior Policy (Abbreviated)

The open exchange of ideas, freedom of thought and expression, and productive scientific debate are central to the mission of the American Nuclear Society (ANS). These require an open and diverse environment that is built on dignity and mutual respect for all participants and ANS staff members, and is free of bias and intimidation.

ANS is dedicated to providing a safe, welcoming, and productive experience for everyone participating in Society events and other Society activities regardless of age, color, creed, disability, ethnicity, gender identity and expression, marital status, military service status, national origin, parental status, physical appearance, race, religion, sex, or sexual orientation. Creation of a safe and welcoming environment is a shared responsibility held by all participants. Therefore, ANS will not tolerate harassment of or by participants (including ANS volunteer leaders and staff members) in any form. Disciplinary action for participants found to have violated this principle may include reprimand, expulsion from an event or activity with or without a refund, temporary or permanent exclusion from all ANS events and activities, suspension or expulsion from volunteer leadership positions or groups, and/or suspension or expulsion from Society membership, as appropriate.

If you or someone else experiences harassment, regardless of how you otherwise choose to initially handle the situation, you are encouraged to report the situation to ANS. It is possible that the behavior you experienced is part of a larger pattern of repeated harassment. Please alert ANS to behavior you feel to be harassment regardless of the offender's identity or standing in the Society.

The designated contacts for reports at CONTE 2019 is CONTE Technical Program Chair Dr. Jane LeClair. Dr. LeClair can be reached at 315-440-2827 or jleclair@washingtoncybercenter.com, or you can leave a message at the ANS Registration Desk for her to contact you directly.

The complete Respectful Behavior Policy can be found at ans.org/about/rbp. If you have questions about the policy, please contact ANS Executive Director Robert C. Fine at 708-579-8200 or *rfine@ans.org*.

General Information

ANS CODE OF FTHICS

Preamble

Recognizing the profound importance of nuclear science and technology in affecting the quality of life throughout the world, members of the American Nuclear Society (ANS) are committed to the highest ethical and professional conduct.

Fundamental Principle

ANS members as professionals are dedicated to improving the understanding of nuclear science and technology, appropriate applications, and potential consequences of their use.

To that end, ANS members uphold and advance the integrity and honor of their professions by using their knowledge and skill for the enhancement of human welfare and the environment; being honest and impartial; serving with fidelity the public, their employers, and their clients; and striving to continuously improve the competence and prestige of their various professions.

ANS members shall subscribe to the following practices of professional conduct:

Principles of Professional Conduct

- 1. We hold paramount the safety, health, and welfare of the public and fellow workers, work to protect the environment, and strive to comply with the principles of sustainable development in the performance of our professional duties.
- 2. We will formally advise our employers, clients, or any appropriate authority and, if warranted, consider further disclosure, if and when we perceive that pursuit of our professional duties might have adverse consequences for the present or future public and fellow worker health and safety or the environment.
- 3. We act in accordance with all applicable laws and these Practices, lend support to others who strive to do likewise, and report violations to appropriate authorities.
- 4. We perform only those services that we are qualified by training or experience to perform, and provide full disclosure of our qualifications.
- 5. We present all data and claims, with their bases, truthfully, and are honest and truthful in all aspects of our professional activities. We issue public statements and make presentations on professional matters in an objective and truthful manner.
- 6. We continue our professional development and maintain an ethical commitment throughout our careers, encourage similar actions by our colleagues, and provide opportunities for the professional and ethical training of those persons under our supervision.
- 7. We act in a professional and ethical manner towards each employer or client and act as faithful agents or trustees, disclosing nothing of a proprietary nature concerning the business affairs or technical processes of any present or former client or employer without specific consent, unless necessary to abide by other provisions of this Code or applicable laws.
- 8. We disclose to affected parties, known or potential conflicts of interest or other circumstances, which might influence, or appear to influence, our judgment or impair the fairness or quality of our performance.
- 9. We treat all persons fairly.
- 10. We build our professional reputation on the merit of our services, do not compete unfairly with others, and avoid injuring others, their property, reputation, or employment.
- 11. We reject bribery and coercion in all their forms.
- 12. We accept responsibility for our actions; are open to and acknowledge criticism of our work; offer honest criticism of the work of others; properly credit the contributions of others; and do not accept credit for work not our own.

Plenary, Special Sessions & Events

MONDAY, FEBRUARY 4

Opening Reception in the Expo

Location: St. Augustine C/D Time: 6:30-8:00 pm

One ticket to the Opening Reception is included in the full meeting registration fee. Additional tickets can be purchased at the ANS Registration desk. The reception is located in the Technology Expo.

Sponsored by:



TUESDAY, FEBRUARY 5

Opening Plenary

Chair: Julie Sickle *(CONTE Executive Sponsor)* **Location:** St. Augustine A/B **Time:** 8:30-9:30 am

The U.S. Navy highly values training to mitigate risk and prevent problems at sea and in the air. Training Officers and Sailors on submarines is a 24/7 job that includes everyone. The submarines and equipment inside are only as good as the crew that operates them in the defense of our country.

Despite even the best training, human errors occur that can lead to problems such as damaged equipment or worse–injured Sailors. This presentation will describe some recent Submarine Force successes and failures and how crew training effected the result.

Speaker: Captain David Roberts (US Naval Academy)

Afternoon Plenary & Luncheon

Chair: Aaron Bergeron (CONTE General Chair) **Location:** St. Augustine A/B **Time:** 11:30 am-1:00 pm

PERSPECTIVES ON THE FUTURE OF NUCLEAR POWER IN THE U.S.

This presentation will provide different perspectives on the domestic future of nuclear energy, how the integration of Light Water Reactors (LWRs) technology and Generation IV technology can lead to sustainable nuclear power, and the important role ANS plays in education, training, and workforce development. With dozens of LWRs under construction around the world, most experts expect this technology to be the primary source of nuclear power well into the latter half of this century due to the continued interest in moving to more advanced technologies (SMRs) and Generation IV systems.

Speaker: John E. Kelly (ANS President)

IAEA's Capacity Building for its Member State

The International Atomic Energy Agency, an inter-governmental organization, has provided various capacity building service upon request to its Member States in the past over 60 years which has facilitated global peaceful pursuance of nuclear technology. With the adoption of UN Sustainable Development Goals (SDGs) and entry into force of Paris Agreement, the Agency continuously plays an active part in helping its Member States to use nuclear and isotopic techniques and thereby contribute directly to attaining 9 of the 17 goals of SDGs. The presentation highlights some key elements of Agency's efforts, particularly in nuclear energy and nuclear technology applications, as well as nuclear education.

Speaker: Huang Wei (IAEA)

Sponsored by:

Evening Reception

Location: St. Augustine C/D Time: 5:00-6:30 pm

One ticket to the Tuesday Reception is included in the full meeting registration fee. Additional tickets can be purchased at the ANS Registration desk. The reception is located in the Technology Expo.

Sponsored by:



Plenary, Special Sessions & Events

WEDNESDAY, FEBRUARY 6

Wednesday Plenary and Awards Luncheon

Chair: Jane LeClair (CONTE Technical Program Chair) **Location:** St. Augustine A/B **Time:** 11:45 am-1:00 pm

Award Presentation

Presentation of the Dr. Robert Long Training Excellence Award: For Leadership and a Continuing Sustained Commitment to Excellence in Nuclear Training and Education.

Recipient: Dr. Richard Coe (*Thomas Edison State University*)

Presenter: Dr. Jane LeClair (Washington Center for Cybersecurity R&D)

Transformation of a Nuclear Engineering Department

This presentation will discuss the formation and implementation of a strategic plan and faculty evaluation rubric that has quadrupled departmental research expenditures resulting in the largest Nuclear Engineering PhD program and largest Graduating class of PhDs ever in the US. It will provide a case study on the activities and priorities instituted to promote this scholarly success.

Speaker: Wes Hines (UT)

Sponsored by:

Evening Reception

Location: St. Augustine C/D Time: 5:00-6:30 pm

One ticket to the Wednesday Reception is included in the full meeting registration fee. Additional tickets can be purchased at the ANS Registration desk. The reception is located in the Technology Expo.

Sponsored by:



THURSDAY, FEBRUARY 7

Closing Plenary and Luncheon

Chair: Russell G. Coon *(CONTE Technical Committee)* **Location:** St. Augustine A/B **Time:** 11:45 am-1:00 pm

INPO Training and Accreditation Update

This presentation provides INPO's perspective on the state of training in the commercial nuclear power industry, and the critical role of training in sustaining high results.

Speaker: Lisa Brattin (INPO)



Technical Sessions: Tuesday February 5

TUESDAY, FEBRUARY 5

TECHNICAL SESSIONS - 9:45 AM

Maintenance and Technical Fundamentals

Cochairs: Robert L. Sandstrom (*Accelerant Solutions, LLC*), Raymond J. Dean (*Excelsior College*) **Location:** St. Augustine E **Time:** 9:45-11:25 am

9:45 am: Maintenance Fundamentals and Technical Skills, Gregory F. Ruppert (INPO)

10:10 am: High Intensity Training to Improve Maintenance Technical Fundamentals, Jason Valtos, Virgil Perry (*TVA*)

10:35 am: Improving Nuclear Fleet Maintenance Fundamentals, P. Esden (*Entergy*), R. Sandstrom (*Accelerant Solutions, LLC*)

11:00 am: Proficiency to Drive Human Performance, Charles Sizemore, Richie Baird (NextEra Energy)

Training Technology, Innovative Methods or Simulations—I

Cochairs: Christopher Hynes (*Duke Energy*), Heather M. Davis (*Exelon Generation*)

Location: St. Augustine F **Time:** 9:45-11:25 am

9:45 am: Utilizing a Plant Engineering 3D Model for Training—First Steps, Václav Vejborný

(Fennovoima)

10:10 am: 3D Print Technology in Training, Christopher A. Rop (*Duke Energy*)

10:35 am: Use of 3D Simulations to Train Technicians, Bei Liu, Michael Johnson (Excelsior Coll), Eric Roe (Univ of Texas, Austin)

11:00 am: Using 3-D Simulations to Engage the Next Generation of Nuclear Workers, Gregory Lugar (Bismarck State College)

Engineering Education and Training

Cochairs: Richard P. Coe (Thomas Edison State Univ), David Helling (Westinghouse)

Location: St. Augustine G Time: 9:45-11:25 am

9:45 am: Innovative Ways in Traditional University Nuclear Training/Education; Seeing, Practicing and Understanding by Doing—Simulation, the Most Effective Way to Learn, Richard P. Coe (Thomas Edison State Univ)

10:10 am: Interactive Online Training Using an Academic Learning Management System (Moodle), David Pearson (Dominion Energy)

10:35 am: An Open-Access Nuclear Knowledge and Innovation Toolkit and the First Steps to its Realization, Brenden J. Heidrich (INL), Jordan M. Argyle (Univ of Idaho), Richard Coe (Thomas Edison State University)

11:00 am: Workforce Impacts and Collaboration Opportunities of DOE-NE's University Programs, Andrew Thomas (*INL*)

TUESDAY, FEBRUARY 5

TECHNICAL SESSIONS - 1:00 PM

Accreditation Lessons Learned—I

Cochairs: Russell G. Coon (VPSP, LLC), Raymond J. Dean (Excelsior College)

Location: St. Augustine E Time: 1:00-2:15 pm

1:00 pm: Challenges for Maintaining Accreditation in Operator Training Programs Operating

Experience, Gerard Hildebrandt (South Texas Project)

1:25 pm: Using Oral Boards to Change Leadership Behaviors at CPNPP, Donna Christiansen,

Jonathan Beaver (Luminant), James Sternisha (Sternisha Consulting)

1:50 pm: Recognizing Challenges and Improving Training—Breaking the Cycle, John R. Goodbred,

Jr. (Talen Energy)

Leadership Development—I

Cochairs: Aaron Bergeron (TVA), Andrew Rodgers (Talen Energy)

Location: St. Augustine F Time: 1:00-2:40 pm

1:00 pm: Leadership Training Aiming at "Never Fukushima Again", Hiroyasu Ito (Japan Nuclear

Safety Inst)

1:25 pm: Aligning Talent Management and Leadership Development at Bruce Power,

Susanne Latimer, Karen Smith (Bruce Power)

1:50 pm: Monitoring and Measuring the Effectiveness of Nuclear Leadership Training,

Genevieve V. Dukette, Lisa M. Clark (INPO)

2:15 pm: Implementation of BWR Owners' Group EP/SAG Revision 4, Richard D. Shindel

(Hyperspring)

Nuclear Uniform Curriculum and College Partnerships

Cochairs: Heather M. Davis (Exelon Generation), Lisa Marshall (NCSU)

Location: St. Augustine G Time: 1:00-2:15 pm

1:00 pm: Nuclear Uniform Curriculum Program, Lori Brady (NEI)

1:25 pm: Continued Enhancement of Learning Outcomes via Human Performance Animations,

Robert Lawlor, Heather Davis (Exelon), Kyren Miller (Bismarck State College),

Christine Carpenter (EPCE)

1:50 pm: Benefits of Diversifying Nuclear Uniform Curriculum Program Partnerships, Kyren S. Miller

(Bismarck State College), Theordore J. Green (APS), Christine Carpenter (EPCE)

Technical Sessions: Tuesday February 5



Technical Sessions: Tuesday February 5

TUESDAY, FEBRUARY 5

TECHNICAL SESSIONS - 3:00 PM

Accreditation Lessons Learned—II

Cochairs: Patrick J. Berry (Patrick Berry Consulting, LLC), Jason Valtos (TVA)

Location: St. Augustine E Time: 3:00-4:15 pm

3:00 pm: Impacts of the Training Accreditation Review at EDF Energy: An Interim Assessment,

David Youles (EDF Energy)

3:25 pm: Streamlined Accreditation Self-Evaluation and Team Reports, Kostas Dovas (INPO),

Kerry Wright (Exelon Generation)

3:50 pm: Reimagining Accreditation, Thomas Lekas (INPO)

New Builds/Training Lessons Learned

Cochairs: Robert J. Rodriguez (*Tecnatom S.A.*), Darren Stiles (*Southern Co*)

Location: St. Augustine G Time: 3:00-4:40 pm

3:00 pm: Safety Culture Reinforcement in a New Build Nuclear Power Plant: Participation in

Nawah Nuclear Safety Fair, Talia Cardeñosa, José C. Limón (Tecnatom)

3:25 pm: Tecnatom Training Experience on a New Build Project: Wylfa Newydd, José Carlos Limón

de Oliveira (Tecnatom), Mark Salisbury (Horizon Nuclear Power)

3:50 pm: Second Simulators Address Plant Training Needs, Michael Battaglia (GSE Performance

Solutions, Inc.), Dave Grubic (Southern Nuclear)

4:15 pm: Lessons Learned: Knowledge Management as a Tool for Radioactive Accidents,

Fernando Barcellos Razuck (IRD)

WEDNESDAY, FEBRUARY 6

TECHNICAL SESSIONS - 8:00 AM

Industry Accreditation Evolution-Panel

Cochairs: Russell G. Coon (VPSP, LLC), Patrick J. Berry (Patrick Berry Consulting, LLC)

Location: St. Augustine E Time: 8:00-9:45 am

INPO and the industry are pursuing innovation of the accreditation process by engaging key stakeholders, including the National Nuclear Accrediting Board members, the nuclear industry corporate training directors, INPO's Executive Advisory Group, and the Nuclear Regulatory Commission. An innovation team made up of INPO employees, industry line and training stakeholders has been assembled to develop recommendations to improve the nuclear industry's training accreditation process. INPO has challenged the innovation team to develop solutions that will maintain public confidence in oversight of training and that will allow redeployment of current and future industry resources from managing accreditation processes to improving training, while maintaining the effectiveness of the current oversight process. This panel will discuss the innovations to the accreditation process, including potential methods, outcomes, challenges, and improvements in the accreditation process.

Panelists:

George Manaskie (INPO)
Tom Lekas (INPO)
Gregg Ludlam (Entergy)
Robert E. Simpson (Waterford Steam Electric Station)
Dan Roy (Duke Energy)

Personnel Training and Qualification—I

Cochairs: Michael L. Marler (Marler Consulting, Inc.), Elizabeth L. McAndrews-Benavides (EPRI)

Location: St. Augustine G Time: 8:00-9:40 am

8:00 am: ADDIE in Training Development for NISP-RP Qualifications, Gary Smith (Exelon)

8:25 am: Applying EPRI's Standardized Task Evaluation Program Implementation to Industry

Initiatives, Charles Lease, Patricia Wade (EPRI)

8:50 am: Teaching Fast Reactors Within the Frame of European Union Projects, Ch. Latgé,

A. Vasile (CEA), K. Mikityuk (Paul Scherrer Inst), Roger Garbil (EU)

9:15 am: The Postgraduate Educational Course (PGEC) of IRD/IAEA in Brazil,

Fernando Barcellos Razuck (IRD)

TECHNICAL SESSIONS - 10:00 AM

Training Technology, Innovative Methods or Simulations—II

Cochairs: Heather M. Davis (Exelon Generation), Christopher Hynes (Duke Energy)

Location: St. Augustine E Time: 10:00-11:40 am

10:00 am: The Veribox: Clinton's HU Performance Improvement Tool, Blye Widmar (Exelon)

10:25 am: Enhancing Systems Training with Interactive System Diagrams, Jose Martin (Tecnatom

USA), Antonio Cruzado (Tecnatom SA), Mike Cadden (Accelerant Solutions)

10:50 am: Modernization of Spanish Full Scope Simulators and Their Impact in Training,

Jose Carlos Limon, Isaac Gonzalez Sevillano (Tecnatom)

11:15 am: Development of Augmented Reality for Learning about Radiation Protection in IRD.

Gabriel De Lima Gonçalves Fernando Barcellos Razuck (IRD)

Technical Sessions: Wednesday February 6



TECHNICAL SESSIONS - 10:00 AM

IAEA International Nuclear Management Academy (INMA) Master's Programmes in Nuclear Technology Management (NTM)—Panel

Chair: Oszvald Glockler (IAEA)

Location: St. Augustine F Time: 10:00-11:45 am

INMA is an IAEA-facilitated collaboration framework in which universities provide master's degree programmes that focus on technical and management competencies for the nuclear sector. Universities that wish to have their NTM master's programme recognized as an INMA-NTM programme must demonstrate that they meet a set of common INMA-NTM programme requirements to be reviewed in an INMA endorsement peer review process by an IAEA team composed of university professors from INMA universities and IAEA staff. The target students of the INMA-NTM programmes are current managers and young professionals with a potential of becoming future managers working in the nuclear sector. The panel discussions will include the perspectives of students and faculties from INMA universities.

Technical Sessions: Wednesday February 6

Panelists:

Huang Wei (IAEA)
John Roberts (Univ of Manchester)
Cable Kurwitz (Texas A&M)
Robert Zedric (Texas A&M)
Asano Kakeru (Univ of Tokyo)

Personnel Training and Qualification—II

Cochairs: Michael L. Marler (Marler Consulting, Inc.), Elizabeth L. McAndrews-Benavides (EPRI)

Location: St. Augustine G Time: 10:00-11:40 am

10:00 am: EPRI's Approach to Updating Training for Multiple End Users, Emma L. Wong,

Jean-Francois Roy (EPRI)

10:25 am: Training to Improve Performance—Beyond Accreditation, George E. Manaskie (INPO)

10:50 am: Risk-Informed Thinking Workshop at the U.S. Nuclear Regulatory Commission,

Donald Harrison, Samson Lee (NRC)

11:15 am: Improving Human Performance When Making Emergency Classification Decisions, Robert McDonald, George McCullough (IFE)

TECHNICAL SESSIONS - 1:00 PM

Operator Licensing and Training-Panel

Cochairs: Patrick J. Berry (*Patrick Berry Consulting, LLC*), Darren Stiles (*Southern Co.*)

Location: St. Augustine E Time: 1:00-2:45 pm

The Operator Licensing Panel for CONTE 2019 will include key members of the NRC, INPO and Industry who will participate in a discussion fueled by a question and answer format. Participants will have open-forum access to the panel to address issues, questions, concerns and challenges related to the topical area. Topics may include some or all of the following:

- Recent revisions to NUREG-1021
- Planned revisions to Operator Knowledge and Ability Catalogs (NUREG-1122 and -1123)
- Recent operator examination experience and issues
- Industry items of interest

Panelists:

Chris Cowdrey (NRC)
Gregg Ludlam (Entergy Nuclear)
Kos Dovas (Exelon Nuclear)

WEDNESDAY, FEBRUARY 6

TECHNICAL SESSIONS - 1:00 PM

Training Technology, Innovative Methods or Simulations—III

Cochairs: Jennifer L. Yunk (Wolf Creek Nuclear Operating Corp.), Raymond J. Dean (Excelsior College)

Location: St. Augustine F **Time:** 1:00-2:40 pm

1:00 pm: ANSI SRO Certification for Management Course via Distance Learning at Exelon,

Bruce Hennigan (Exelon)

1:25 pm: Electronic Training Analysis, David Huff (Exelon)

1:50 pm: Leading Innovation: Inspiring Instructors to Foster Student Engagement, Jennifer Lawless

(Exelon)

2:15 pm: Bruce Power's Inaugural Learn at Work Week, Susanne Latimer (*Bruce Power*)

Maintaining the Training Conscience, SAT Knowledge—I

Cochairs: David Helling (Westinghouse), Robert L. Sandstrom (Accelerant Solutions, LLC)

Location: St. Augustine G Time: 1:00-2:40 pm

1:00 pm: Can the CPLP Provide a Path to Expert Instructor?, Angie Rucker, Chris Hynes, Shari Bowden

(Duke Energy)

1:25 pm: From Technical Expert to Adult Educator, Tyler Reed (Westinghouse)

1:50 pm: Establishing and Maintaining an Effective Training Conscience, Terrence P. Maund

(INPO)

2:15 pm: Reducing Cognitive Load with Worked Examples, Pamela Aigner (Westinghouse)

TECHNICAL SESSIONS - 3:00 PM

Operations Fundamentals

Cochairs: Tyler Reed (Westinghouse), Andrew Rodgers (Talen Energy)

Location: St. Augustine E Time: 3:00-4:40 pm

3:00 pm: Operator Fundamentals Performance, Kevin K. Davison (INPO)

3:25 pm: ATWS Improvements at BFN. Bill Williamson, Denny Campbell (Browns Ferry Nuclear

Plant - TVA)

3:50 pm: Gaining Value from Virtual Control Panels, Gil Grady (GSE Performance Solutions, Inc.)

4:15 pm: "CRS in a Bubble", Teamwork Scenario, Richard E. Tyler (Exelon)

Training Technology, Innovative Methods or Simulations—IV

Cochairs: Robert Rodriguez (Tecnatom), Jennifer Yunk (Wolf Creek Generating Station)

Location: St. Augustine F Time: 3:00-4:40 pm

3:00 pm: Operator Generic Fundamentals Phase via Distance Learning at Exelon, Bruce Hennigan

(Exelon)

3:25 pm: Experiment Data Collection Methodology for Application in Crew Debriefs,

George McCullough (Exitech Corp)

3:50 pm: Technology, Innovation and Worker Engagement in Training at Exelon, Jason Willemin

(Exelon)

4:15 pm: Introducing Robotics into Radiation Protection Curriculum, Mark A. Palmer,

Samantha Travis (Chattanooga State Community College)

Technical Sessions: Wednesday February



TECHNICAL SESSIONS - 8:00 AM

Preparing the Nuclear Professional for a Life in a Cyber Secure World-Panel

Cochairs: Jane A. LeClair (Washington Center for Cybersecurity R&D),

Richard P. Coe (Thomas Edison State Univ)

Location: St. Augustine E Time: 8:00-9:45 am

Nuclear power production facilities increasing rely on complex digital control systems and other advanced technology to improve plant reliability and efficiency. Additionally cyber criminals are becoming increasing innovative identifying cyber security vulnerabilities and developing advanced methods to exploit them. As these two factors converge, the risk of a cyber intrusion event at a nuclear power plant will increase. Nuclear professionals need to continually augment their toolkits with new skills and knowledge to maintain safe operation of our nuclear power production facilities. Education and training play a significant role in this. This panel will examine the implications for nuclear professionals and the opportunities available today.

Panelists:

Scott Junkin (Southern Co.)
Matt Gibson (EPRI)
Raymond George (INPO)
Amjad Ali (Thomas Edison State Univ)

Leadership Development—II

Cochairs: Aaron Bergeron (TVA), Darren Stiles (Southern Co)

Location: St. Augustine F Time: 8:00-9:15 am

8:00 am: Bruce Power's Leadership Pipeline Program and Action Learning Projects,

Susanne Latimer (Bruce Power)

8:25 am: Cognitive Roots of Risk-Seeking Behaviors: What Leaders Need to Know,

Dorothy C. Andreas, Elmo E. Collins (O Analysis)

8:50 am: Lead Development Program (LDP), Douglas Batche (Exelon)

Maintaining the Training Conscience, SAT Knowledge—II

Cochairs: David Helling (Westinghouse), Jason Valtos (TVA)

Location: St. Augustine G Time: 8:00-9:40 am

8:00 am: An On-Going Struggle—Maintaining Training Conscience, Line Ownership, SAT

Knowledge and Expert Instructors, Robert K. Tomlinson (INPO)

8:25 am: Affective Domain: We Should Ignore It No Longer, Jason L. Stone (Xcel Energy),

Dru G. Barisich (APS)

8:50 am: Integrating the Arts into Nuclear Training, Pamela S. Aigner, David W. Helling

(Westinghouse)

9:15 am: Teaching Learning How to Learn, David Helling (Westinghouse)

Technical Sessions: Thursday February

THURSDAY, FEBRUARY 7

TECHNICAL SESSIONS - 10:00 AM

Physical and Cyber Security in the Nuclear Sector-Panel

Cochairs: Jane A. LeClair (Washington Center for Cybersecurity R&D), Richard Coe (Thomas Edison

State University)

Location: St. Augustine E Time: 10:00-11:45 am

The Physical and Cyber Security of our critical infrastructure is one of the most important topics in the Nuclear Sector. As the energy sector was the target of nearly 40% of cyber attacks, the nuclear community must be increasingly vigilant and be aware that physical and cyber security are entwined. Safety and Security continues to be the watchword in the nuclear industry and our panel will highlight the training and education of our security professionals with respect to the current and future state that the nuclear industry may expect in the years ahead.

Panelists:

Doug Batche (Exelon)
Nathan Faith (Exelon)
Max Robertson (FPL)
Raymond George (INPO)

Workforce Recruiting and Development

Cochairs: Terrence Maund (INPO), Russell G. Coon (VPSP, LLC)

Location: St. Augustine F Time: 10:00-11:15 am

10:00 am: Using Distance Learning and Training on Demand to Develop Your Workforce, Charles Sizemore, Kellie Gatto (NextEra Energy)

10:25 am: NuScale SMR Transformation of Traditional Site Staffing Levels, Michael Downs (TVA), Timothy Toyar (NuScale Power), Michaelle Conner (TVA)

10:50 am: Leveraging Modern Technology for Rapid Nuclear Knowledge Access, Thomas Braudt, Everett Perkins (*Certrec Corp*)

Human Performance Improvement

Cochairs: Jason Valtos (*TVA*), Lisa M. Marshall (*NCSU*) **Location:** St. Augustine G **Time:** 10:00-11:15 am

10:00 am: Proficiency in Workers and Leaders, Beyond Human Performance Tools, Deborah Williams (INPO)

10:25 am: Making HU Tools and Techniques Effective: An Ingraining Strategy, Bruce O'Brien, Gary R. Cavanaugh (Marathon Consulting Group)

10:50 am: Command and Control, John Condreay, Delroy Thomas (*Exelon*)

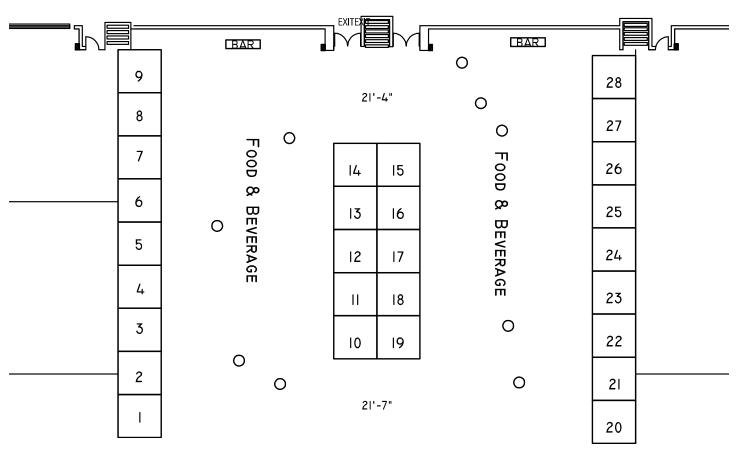
Technical Sessions: Thursday February

Exhibitors List

CORYS Inc Booths 3	3 & 4 L3	MAPPS	. Booths 10 & 11
Dominion Energy Booth 14	4 Ma	axeta Technologies	. Booth 18
Duke Energy Booth 25	5 On	tario Power Generation	. Booth 22
Electric Power Research Institute (EPRI) Booths 6	Sca	anning America, Inc	. Booth 8
EXCEL Services Corporation Booth 16	Sin	ntronics	. Booth 26
Excelsior College Booth 19	TF	CNATOM	. Booths 23 & 24
Exelon Generation Booth 5	TE	LETRIX	. Booth 2
Focus Learning Corporation Booth 12	2 The	omas Edison State University.	. Booth 13
GSE Systems, Inc Booth 20) We	estinghouse Electric Company.	. Booth 1
Hyperspring Booth 21	1 The	e Westwind Group, Inc	. Booths 27 & 28
Institute for Energy Technology Booth 17	7 WS	SC, Inc	. Booth 15

Exhibit Hall Floor Plan

February 5–7, 2019 | St. Augustine, FL | World Golf Village, Renaissance St. Augustine Resort



Exhibitor & Expo Info

CORYS Inc.

Jacksonville, FL (Booths 3 & 4)

With 190 new power plant simulators delivered over 28 years, CORYS brings its customers a wealth of experience. CORYS is contracted to maintain over 80 nuclear plant full scope simulators in the U.S and France, providing more major nuclear simulator upgrades to full scope simulators than all vendors combined.

Dominion Energy

Glen Allen, VA (Booth 14)

Dominion Energy is one of the nation's largest producers and transporters of energy, with a portfolio of approximately 26,000 megawatts of electric generation; 14,800 miles of natural gas transmission pipeline; 51,800 miles of natural gas distribution pipeline; 6,600 miles of electric transmission lines; and 57,900 miles of electric distribution lines.

Our company is built on a proud legacy of public service, innovation, and community involvement...stop by our booth for some virtual experiences!

Duke Energy

Charlotte, NC (Booth 25)

Duke Energy, the second largest nuclear operator in the United States, operates 11 nuclear generating units in North Carolina and South Carolina. The company has approximately 49,500 megawatts of electric generating capacity in the Carolinas, the Midwest and Florida, and delivers electricity to approximately 7.6 million U.S. customers.

Electric Power Research Institute (EPRI)

Palo Alto, CA (Booths 6 & 7)

A nonprofit organization, the Electric Power Research Institute, Inc. (EPRI) brings together well-known scientists, engineers and experts to conduct objective research and training in electricity. EPRI U draws upon the company's 40+ years of experience to host and customize training onsite, through computer-based modules, and video training.

EXCEL Services Corporation

Rockville, MD (Booth 16)

EXCEL Services Corporation provides operations, engineering, safety/regulatory services for the global energy industry, including License Renewal, Power Uprates, 24-Month Cycle Extensions, ITS Conversions/Upgrades, Training, New Nuclear Build, Critical Infrastructure Protection, and Executive Performance Solutions. In its 33-year history, EXCEL has worked globally and with every nuclear utility in the U.S.

Excelsior College

Albany, NY (Booth 19)

Excelsior College is a regionally accredited, nonprofit distance learning institution founded in 1971 focused on providing educational opportunity to adult learners. The College contributes to the development of a diverse, educated society by valuing lifelong learning with an emphasis on serving individuals who are historically underrepresented by higher education. Excelsior meets students where they are—academically and geographically—removing obstacles to the educational goals of adult learners through affordable access to quality instruction and the assessment of learning. Our pillars include innovation, flexibility, academic excellence, and integrity.

Exelon Generation

Kennett Square, PA

(Booth 5)

Exelon Nuclear, a division of Exelon Generation, operates the largest fleet of nuclear plants in America. We operate 22 reactors across 13 facilities in Illinois, Maryland, New York, and Pennsylvania. Our 11,000 nuclear professionals safely and reliably provide a continuous supply of carbon-free energy that America can count on.

Focus Learning Corporation

San Luis Obispo, CA

Booth 12

FOCUS Learning Corporation is the producer of the VISION Training and Performance Support System. VISION is considered a standard in the nuclear power and related industries for software that facilitates Systematic Approach to Training (SAT) process and "ADDIE". FOCUS has been a major force in "Connecting Knowledge the Work People Do" since 1985.

GSE Systems, Inc.

Sykesville, MD

(Booth 20)

For over 45 years GSE has been a world leader in real-time simulation software that helps nuclear utilities and laboratories optimize their training, increase efficiency and excel in safety and reliability. GSE has expanded into operations training and procedure writing and certification through its Hyperspring LLC and Absolute Consulting, subsidiaries.

Hyperspring

Huntsville, AL

(Booth 21)

Hyperspring is a leading provider of comprehensive training and professional service solutions for the energy sector. We have demonstrated expertise providing the best BWR & PWR SROs and M&T SME Training Instructors in the market. Using comprehensive Hyperspring Programs, you realize synergies from a cohesive approach to the complete program deliverable—such as GFE, ILOT, Lesson Plan Development, Simulator Scenarios, and Exam Bank Updates—ensuring a successful program at an exceptional value to you.

Institute for Energy Technology

Norway

(Booth 17)

Institute for Energy Technology is the largest Institute for energy research in Norway. Our work has contributed to more secure and effective nuclear power plants all over the world. IFE today is in the forefront of energy research, and we play an important role in the development of new and better technology for NPPs.

L3 MAPPS

Montreal, Canada

(Booths 10 & 11)

Whether supporting the existing nuclear fleet or New Build, count on L3 MAPPS to effectively deliver a simulator solution that best suits your training or engineering needs. We offer simulators ranging from classroom trainers and system trainers to full scope simulators—all aimed at unlocking value for your organization.

What's new? Check out Orchid® IX— the latest in full 3D **19** visualization display technology—without VR headsets!

Exhibitor & Expo Info

Maxeta Technologies

Skillman, NJ (Booth 18)

Maxeta Technologies develops software that supports Nuclear Training, including our nTAP™ and TForce™ applications. nTAP™ is a cloud-based system for documenting self-assessments prior to an INPO Accreditation Team Visit (ATV). TForce™ provides a fully electronic process for training requests and actions as part of the Systematic Approach to Training (SAT).

Ontario Power Generation

Ontario, Canada (Booth 22)

Ontario Power Generation's (OPG) focus is on the clean, reliable and low-cost generation and sale of electricity from its generating assets, while operating in a safe, open and environmentally responsible manner. OPG was established under the Business Corporations Act (Ontario) and is wholly owned by the Province of Ontario.

Scanning America, Inc.

Lawrence, KS Booth 8

We are the Document Conversion Pro's. We are experienced in all aspects of nuclear power generation document conversion projects including drawings, aperture cards, microfilm, microfiche and supporting paper documents. Scanning at your facility or ours, we utilize the best equipment in the industry while saving you time and money.

Simtronics

Little Silver, NJ (Booth 26)

Simtronics Corporation provides Operator Training Simulators (OTS) for the Process Industries and the Educational Institutions that train Operators and Technicians. Training Simulators provide a realistic environment for operators, engineers, technicians, and students to practice real-life scenarios including start-ups, shutdowns, troubleshooting, and emergency response.

Simtronics is on the forefront of software development for Operator Training Simulators (OTS) and e-learning for the Process Industries. Our software provides an automated solution for process training and education that is self-paced and self-study. Instructional features, detailed documentation, and 0-100% scoring help provide an excellent solution to performance-based training needs. Simtronics Training Simulators and e-learning are your answer to process training and educational needs.

TECNATOM

Madrid, Spain

(Booths 23 & 24)

Tecnatom S.A. was established in April 1957, and has grown into a multi-group international company with subsidiaries in France, Brazil, USA, China, Mexico and the UAE. The group's nuclear services include (i) training of NPP personnel (ii) engineering support (iii) component inspection, Non-destructive Test (NDT) and structural integrity assessment.

TELETRIX

Pittsburgh, PA (Booth 2)

Manufactured in the USA for over 30 years, Teletrix provides solutions to ALARA minded institutions for hands on educational activities without any exposure to sources in a realistic and repeatable manner. Teletrix training simulators are effective and reliable tools that eliminate handling, transporting or exposure to radioactive material.

TELETRIX

2000 Golden Mile Highway, Suite C

Pittsburgh, PA 15239

P: 412.798.3636 F: 412.798.3633 E: info@teletrix.com W: Teletrix.com

Thomas Edison State University

Trenton, NJ (Booth 13)

Finish Your Degree. Advance Your Career. On-Line, Anytime, Anywhere

Prepare for professional advancement. Thomas Edison State University's School of Applied Science and Technology offers online programs designed for those in the nuclear power and energy utility fields. Degree programs and certificates are offered entirely online and can be completed where and when it is convenient for you. Undergraduate students can save time and money by earning credit for professional and military training, credit-by-exam options and portfolio assessment and our generous transfer credit policy.

Westinghouse Electric Company

Cranberry Township, PA (Booth 1)

Westinghouse Electric Company is the world's leading supplier of safe and innovative nuclear technology. We provide our utility customers around the world with the most reliable, dependable nuclear power plants, nuclear fuel, plant automation and operating plant products and services. At Westinghouse, we are solely focused on nuclear energy technology. Our goal is simple-- to provide solutions to our customers to keep their plants safe, reliable and efficient.

The Westwind Group, Inc.

Wilmington, NC

(Booths 27 & 28)

The Westwind Group, Inc. (WWG) is a multifaceted consulting firm whose mission is to equip our domestic & international clients with solutions that measurably contribute to productivity & continuous improvement in the work place.

WWG specializes in training & performance support solutions including accreditation renewal management, technical & information technology services, project management & management support services. Our managers & consultants have extensive experience & can provide turnkey service solutions or staff augmentation.

WSC. Inc.

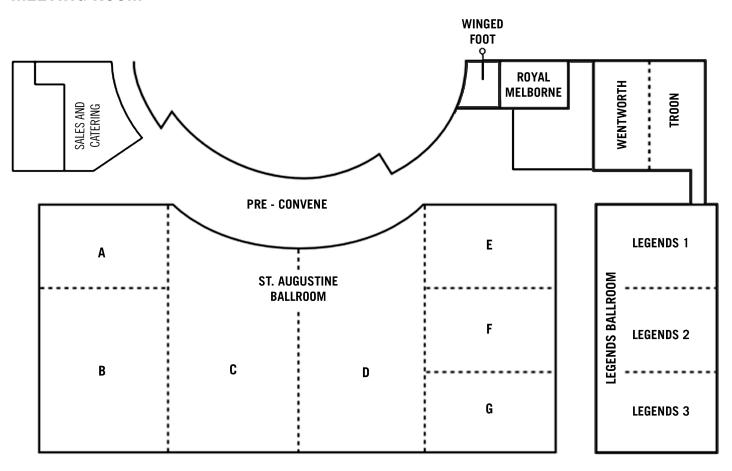
Frederick, MD

(Booth 15)

WSC, Inc. is a global simulation technology company that deploys its proprietary 3KEYSOFTWARE® Simulation Technology for nuclear training simulators and to support engineering design and commissioning of new and upgraded plants Worldwide. WSC leads the industry with web based training simulators accessible at any time or place via the internet or intranet delivery.

Hotel Floorplan

MEETING ROOM





ANS Meetings

NUCLEAR AND EMERGING TECHNOLOGIES FOR SPACE (NETS) 2019 FEB 25-27, 2019 | Richland, WA

INTERNATIONAL HIGH-LEVEL RADIOACTIVE WASTE MANAGEMENT 2019 (IHLRWM 2019)
APR 14-18, 2019 | Knoxville, TN | Knoxville Convention Center

2019 INTERNATIONAL TOPICAL MEETING ON PROBABILISTIC SAFETY ASSESSMENT AND ANALYSIS (PSA 2019)

APR 28-MAY 3, 2019 | Charleston, SC | Charleston Marriott

2019 ANS ANNUAL MEETING

JUN 9-13, 2019 | Minneapolis, MN | Hyatt Regency Minneapolis

UTILITY WORKING CONFERENCE AND VENDOR TECHNOLOGY EXPO AUG 4-7. 2019 | Amelia Island. FL | Omni Amelia Island Plantation

19TH INTERNATIONAL CONFERENCE ON ENVIRONMENTAL DEGRADATION OF MATERIALS IN NUCLEAR POWER SYSTEMS - WATER REACTORS

AUG 18-22, 2019 | Boston, MA | Seaport Hotel & World Trade Center

18TH INTERNATIONAL TOPICAL MEETING ON NUCLEAR REACTOR THERMAL HYDRAULICS

AUG 18-22, 2019 | Portland, OR | Marriott Portland Downtown Waterfront

M&C 2019

AUG 25-29, 2019 | Portland, OR | Marriott Portland Downtown Waterfront

GLOBAL/TOP FUEL 2019

SEP 22-27, 2019 | Seattle, WA | The Westin Seattle

MATERIALS IN NUCLEAR ENERGY SYSTEMS (MINES)

OCT 6-10, 2019 | Baltimore, MD | Hilton Baltimore

2019 ANS WINTER MEETING AND NUCLEAR TECHNOLOGY EXPO

NOV 17-21, 2019 | Washington, DC | Marriott Wardman Park

EMBEDDED TOPICAL MEETING YOUNG PROFESSIONALS CONGRESS (YPC)

NOV 16, 2019 | Washington, DC | Marriott Wardman Park