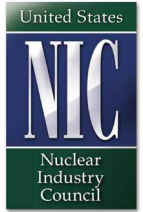




ANS



Sponsored International Conference

2018 Pacific Basin Nuclear Conference

Advancing and Sustaining Nuclear Energy

PBNC 2018 Official Program

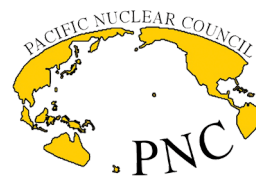


Sept. 30 - Oct. 4, 2018
Hyatt Regency
San Francisco, CA



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International
Conference



2018 Pacific Basin Nuclear Conference

Sustaining and Advancing Nuclear Energy

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Meeting Officials

Sustaining and Advancing Nuclear Energy

2018 PBNC



HONORARY CHAIR
Mark Peters
Idaho National Laboratory
(U.S.)



GENERAL COCHAIR
Donald Eggett
Eggett Consulting LLC
(U.S.)



GENERAL COCHAIR
Mimi Limbach
Potomac Communications Group
(U.S.)



ASSISTANT GENERAL CHAIR
David Blee
U.S. Nuclear Industry Council
(U.S.)



FINANCE CHAIR
Ted Quinn
Technology Resources
(U.S.)



PLENARY PROGRAM CHAIR
Kathy McCarthy
Canadian Nuclear Laboratories
(Canada)



TECHNICAL PROGRAM CHAIR
Corey McDaniel
Canadian Nuclear Laboratories
(Canada)



U.S. TECHNICAL PROGRAM COCHAIR
Lori A. Braase
Idaho National Laboratory
(U.S.)



SECRETARIAT
Grace Meikle
Canadian Nuclear Laboratories
(Canada)



PUBLICATIONS CHAIR
Piyush Sabharwall
Idaho National Laboratory
(U.S.)

Meeting Officials

Track Leaders and Organizers

TECHNICAL PROGRAM CHAIR

Corey McDaniel *Canadian Nuclear Laboratories (Canada)*

SECRETARIAT

Grace Meikle *Canadian Nuclear Laboratories (Canada)*

U.S. TECHNICAL PROGRAM COCHAIR

Lori A. Braase *Idaho National Laboratory (United States)*

INTERNATIONAL TECHNICAL PROGRAM COCHAIRS

Canada: Gina Strati, *Canadian Nuclear Laboratories (Canada)*

Korea: Yunho Kim, *Korean Hydro and Nuclear Power (South Korea)*

China: Danrong Song, *Nuclear Power Institute of China (China)*

Japan: Chiaki Kono, *Institute of Applied Energy and Taro Shimada, Japan Atomic Energy Agency (Japan)*

Taiwan: Linghuan Chiao, *Taiwan Economic and Cultural Representative Office (Taiwan)*

Mexico: Juan Luis Francois, *Universidad Nacional Autónoma de México (Mexico)*

TRACK 1 – SAFETY & SECURITY

Dong-wook Jeong, *Chung-ang University (South Korea)*

Wei Wu Chao, *TECRO (Taiwan)*

Pamela F. Nelson, *UNAM (Mexico)*

Jordi Roglans-Ribas, *ANL (United States)*

Temitope Taiwo, *ANL (United States)*

TRACK 2 – OPERATIONS & MAINTENANCE

Bruce Hallbert, *INL (United States)*

Caleb Ward, *U.S. Nuclear Industry Council (United States)*

TRACK 3 – NEW BUILD

Jeff Merrifield, *Pillsbury Law (United States)*

Kamal Verma, *SNC-Lavalin (Canada)*

TRACK 4 – DECOMMISSIONING & WASTE MANAGEMENT

Seok-koo Sim, *EN2T (South Korea)*

Bill Wilmarth, *Savannah River National Laboratory (United States)*

Ian Castillo, *CNL (Canada)*

TRACK 5 – SUPPLY CHAIN & QUALITY MANAGEMENT

David Blee, *U.S. Nuclear Industry Council (United States)*

Dong-Wook Jeong, *Chung-ang University (South Korea)*

TRACK 6 – FUEL CYCLE

Juan-Luis Francois, *UNAM (Mexico)*

Jon Carmack, *INL (United States)*

Blair Bromley, *CNL (Canada)*

TRACK 7 – ADVANCED REACTORS

Metin Yetisir, *CNL (Canada)*

Armando Gomez, *Instituto Nacional de Investigaciones Nucleares (Mexico)*

TRACK 8 – PUBLIC ACCEPTANCE

Seung-kook Roh, *KAERI (South Korea)*

Laura Hermann, *Potomac Communications (United States)*

Margot Hurlbert, *University of Regina (Canada)*

Javier Palacios, *Instituto Nacional de Investigaciones Nucleares (Mexico)*

TRACK 9 – ECONOMICS

Seung-kook Roh, *KAERI (South Korea)*

Ramesh Sadhankar, *CNL (Canada)*

Tomoko Murakami, *Institute of Energy Economics (Japan)*

Justin Coleman, *INL (United States)*

Cecilia Martin-del-Campo, *UNAM (Mexico)*

TRACK 10 – MEDICINE


Saed Mizraddeh, *ORNL (United States)*

Seung-ryong Cho, *KAIST (South Korea)*

Candice Didychuk, *CNL (Canada)*

Daily Schedule

Sunday, September 30

<p>12:00-5:00 pm 3:00-6:00 pm 5:00-7:00 pm</p>	<p>Exhibitors Move In Registration Welcome Reception</p>  <p><i>Sponsored by</i> Canadian Nuclear Laboratories Laboratoires Nucléaires Canadiens</p>	<p>Grand Ballroom Regency A Grand Ballroom A/Foyer</p>
<p>6:00-6:30 pm</p>	<p>U.S. Congressional Keynote Address by Senator James Risch</p>	<p>Grand Ballroom A/Foyer</p>

Monday, October 1

<p>7:00 am-5:00 pm 7:00 am-5:00 pm 7:30-8:00 am 8:00-10:00 am 10:00-10:15 am</p>	<p>Registration Exhibits Open Morning Coffee Service in Exhibit Hall Opening Plenary: Advancing and Sustaining Nuclear Energy—Government Perspectives Refreshment Break in Exhibit Hall Grand</p> <p><i>Sponsored by</i></p>  <p>ORGANIZATION OF CANADIAN NUCLEAR INDUSTRIES <i>Clean Energy for a Low Carbon Economy</i></p>	<p>Regency A Grand Ballroom Grand Ballroom Ballroom B/C Ballroom A/Foyer</p>
<p>10:15 am-12:00 pm 12:00-1:30 pm 12:00-1:30 pm 1:30-3:00 pm 1:30-3:00 pm</p>	<p>Opening Plenary: Advancing and Sustaining Nuclear Energy—Industry Perspectives Lunch in Atrium Coffee/Dessert in Exhibit Hall Opening Plenary Afternoon Session: Technical Sessions</p> <ul style="list-style-type: none"> • Probability Risk Assessment, Safety, and Control Systems • Reactor Safety Analysis Methodologies and Codes—I • Nuclear Fuels and Fluid Dynamics • Advanced Chemistry and Processing Options • Advances in Light Water Cooled Reactors—I: Pressured Water Reactors • Fuel, Core, and Related Topics—I 	<p>Ballroom B/C Grand Ballroom A/Foyer Bayview B</p>
<p>3:00-3:30 pm</p>	<p>Refreshment Break in Exhibit Hall</p> <p><i>Sponsored by</i></p>  <p>Westinghouse</p>	<p>Golden Gate Grand Ballroom A/Foyer</p>
<p>3:30-5:00 pm 3:30-5:00 pm</p>	<p>Opening Plenary Afternoon Session—II Technical Sessions</p> <ul style="list-style-type: none"> • Recent Advances in Nuclear Security • Advances in Nuclear Materials Safety • Enabling Long Term Operations • Advances in Radionuclide Analysis in Support of Decontamination and Decommissioning • Advances in Light Water Cooled Reactors—II: Integral PWRs • Fuel, Core, and Related Topics—II 	<p>Bayview B Seacliff A Seacliff B Seacliff C Seacliff D Marina Golden Gate</p>

Daily Schedule

Tuesday, October 2

<p>7:00 am-5:00 pm 7:00 am-5:00 pm 7:30-8:00 am 8:00-9:45 am 9:45-10:15 am</p>	<p>Registration Exhibits Open Morning Coffee Service in Exhibit Hall Advancing Nuclear Energy Morning Session—I Refreshment Break in Exhibit Hall</p>	<p>Regency A Grand Ballroom Grand Ballroom A/Foyer Ballroom B/C Grand Ballroom A/Foyer</p>
<p>10:15 am-12:00 pm 12:00-1:30 pm 12:00-1:30 pm 1:30-3:00 pm</p>	<p>Advancing Nuclear Energy Morning Session—II Lunch Break and Technical Poster Session Coffee/Dessert in Exhibit Hall Technical Sessions</p>	<p>Ballroom B/C Atrium Grand Ballroom</p>
<p>3:00-3:30 pm 3:30-5:00 pm</p>	<p><i>Sponsored by</i></p> <p style="text-align: center;">FLUOR.</p> <p>Advancing Nuclear Energy Morning Session—II Lunch Break and Technical Poster Session Coffee/Dessert in Exhibit Hall Technical Sessions</p> <ul style="list-style-type: none"> • Enabling Advanced Reactors • Policy and Regulatory Approaches to Nuclear Safety • Design Certification and Construction • Recent Advances in Plant Digitization • Advances in Fuel Storage Options and Review of Challenges—I • Novel Reactor Concepts and Licensing Novel Reactors • Communication Impact of New Nuclear Technologies and Uses <p>Refreshment Break in Exhibit Hall Technical Sessions</p> <ul style="list-style-type: none"> • Advancing Nuclear Medicine • Reactor Safety Analysis, Methodologies, and Codes—II • Construction and International Considerations • Technologies for Power Operations • Advances in Fuel Storage Options and Review of Challenges—II • Innovative Technologies for Advanced Reactors • Promoting Nuclear Energy Education 	<p>Bayview B Seacliff A Seacliff B Seacliff C Seacliff D Marina Golden Gate Grand Ballroom A/Foyer</p>
<p>3:00-3:30 pm 3:30-5:00 pm</p>	<p>Technical Sessions</p> <ul style="list-style-type: none"> • Advancing Nuclear Medicine • Reactor Safety Analysis, Methodologies, and Codes—II • Construction and International Considerations • Technologies for Power Operations • Advances in Fuel Storage Options and Review of Challenges—II • Innovative Technologies for Advanced Reactors • Promoting Nuclear Energy Education 	<p>Bayview B Seacliff A Seacliff B Seacliff C Seacliff D Marina Golden Gate</p>



#ANSMeeting

Daily Schedule

Wednesday, October 3

7:00 am-5:00 pm	Registration	Regency A
7:00 am-1:30 pm	Exhibit Open	Grand Ballroom A/Foyer
7:30-8:00 am	Morning Coffee Service in Exhibit Hall	Grand Ballroom A/Foyer
8:00-9:45 am	Sustaining Nuclear Energy Morning Session—I	Ballroom B/C
9:45-10:15 am	Refreshment Break in Exhibit Hall	Grand Ballroom A/Foyer
10:15 am-12:00 pm	Sustaining Nuclear Energy Morning Session—II	Ballroom B/C
12:00-1:30 pm	Lunch Break in Atrium	
12:00-1:30 pm	Coffee/Dessert in Exhibit Hall	Grand Ballroom A/Foyer
1:30-3:00 pm	Technical Sessions	
	<ul style="list-style-type: none"> • Sustainable Approaches to the Nuclear Fuel Cycle • Severe Accident Management • Economics—I • Advances in Engineering Design • Recent Advances in World-Wide Decommissioning—I • Enabling Advanced Reactors: Research Facilities • New Approaches to Nuclear Outreach 	Bayview B Seacliff A Seacliff B Seacliff C Seacliff D Marina Golden Gate Seacliff Foyer
3:00-3:30 pm	Refreshment Break	
3:30-5:00 pm	Technical Sessions	
	<ul style="list-style-type: none"> • Addressing Challenges in the Global Nuclear Supply Chain • Thermal Hydraulics • Economics—II • Recent Advances in World-Wide Decommissioning—II • Heat-Pipe Reactors and Sodium-Cooled Reactor • Advances in Nuclear Medicine 	Bayview B Seacliff A Seacliff B Seacliff D Marina Golden Gate Grand Ballroom B
6:00-10:00 pm	Wednesday Gala Dinner	

Thursday, October 4

9:00 am-2:30 pm	UC Berkeley Nuclear Engineering Campus Technical Tour	Board the bus for the tour at the Market Street Foyer Exit at 8:45 am.
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General Information

MEETING INFORMATION

The American Nuclear Society (ANS) is pleased to host the 21st Pacific Basin Nuclear Conference (PBNC) and Technology Exhibition under the auspices of the Pacific Nuclear Council. The conference will be held September 30-October 4, 2018 at the Hyatt Regency in San Francisco, CA.

This International meeting is a broad-based meeting focused on areas of nuclear energy, engineering and science, and policy issues that accompany nuclear energy programs throughout the Pacific Rim. The meeting is sponsored by the Pacific Nuclear Council and ANS.

The Pacific Basin Nuclear Conference (PBNC) was initiated originally as regional cooperative fora to advance peaceful uses of nuclear energy in the Pacific Basin region. The first meeting was held in 1976 in Honolulu, Hawaii, USA. They have been held about every two years, under the joint sponsorship of the Pacific Nuclear Council (PNC) and a sponsoring PNC Member Society. The conferences have played a vital role in providing a forum for discussion and information relating to both research and development and to the implementation of nuclear energy technology in the Pacific Basin.

REGISTRATION

Location: Regency A

Name badges must be worn during all technical sessions, in the Expo and at events. Certain events require a ticket, and may entail an additional cost.

REGISTRATION HOURS

Sunday, September 30	3:00 pm-6:00 pm
Monday, October 1	7:00 am-5:00 pm
Tuesday, October 2	7:00 am-5:00 pm
Wednesday, October 3	7:00 am-5:00 pm

SPEAKER READY ROOM

Location: Regency B

Monday	7:30 am-5:00 pm
Tuesday	7:30 am-5:00 pm
Wednesday	7:30 am-3:30 pm

ATTENDEE MEAL FUNCTIONS

Morning Coffee Service, Lunch & Breaks

Morning coffee service, Lunch and morning and afternoon beverages will be provided to all registered meeting attendees, Monday-Wednesday.

Welcome Reception

(2) Drink tickets are included with a full meeting registration.

EXPO HOURS

Location: Grand Ballroom A & Grand Ballroom Foyer

Join us and visit with our exhibitors in the PBNC Exhibit! Learn about new technology, products and services that are being offered. Morning coffee service, breaks and reception will be hosted in the PBNC Exhibit. For more information or to view the floorplan and exhibitors see page 36.

Sunday, September 30	5:00 pm-7:00 pm
Monday, October 1	7:00 am-5:00 pm
Tuesday, October 2	7:00 am-5:00 pm
Wednesday, October 3	7:00 am-1:30 pm

ATTENDEE WIFI

Log in: PBNC2018
Password: PBNC2018

Wifi at PBNC 2018 is proudly sponsored by



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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 the 2018 PBNC are ANS President John Kelly or Executive Director Bob Fine. John Kelly can be reached at president@ans.org. Bob Fine can be reached at rfine@ans.org, or you can leave a message at the ANS Registration Desk for one of them to contact you directly.

The complete Respectful Behavior Policy can be found at www.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 ETHICS

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.

Consent to Use Photographs and Videos: All attendance of registered participants, attendees, exhibitors, sponsors and guests ("you") at American Nuclear Society ("ANS") meetings, courses, conventions, conferences, or related activities ("Events") constitutes an agreement between you and ANS regarding the use and distribution of your image, including but not limited to your name, voice and likeness ("Image"). By attending the ANS Events, you acknowledge and agree that photographs, videotaping, live feed video and audio, and/or audio recordings may be taken of you and you grant ANS the right to use, in perpetuity, your Image in any electronic or print distribution, or by other means hereinafter created, both now and in the future, for media, art, entertainment, promotional, marketing, advertising, trade, internal use, educational purposes or any other lawful purpose.

Plenary, Special Sessions & Events

SUNDAY, SEPTEMBER 30

Welcome Reception

Time: 5:00-7:00 pm **Location:** Grand Ballroom

U.S. Congressional Keynote Address:

James Risch (*U.S. Senator for Idaho (United States)*)



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MONDAY, OCTOBER 1

Opening Plenary Morning Session

Location: Ballroom B/C

8:00-8:15 am Welcome

ANS Welcome Address: John Kelly (*President, American Nuclear Society (United States)*)

PBNC Plenary Chair Welcome Address: Kathryn McCarthy (*Vice President for Research and Development and Laboratory Director, Canadian Nuclear Laboratories (Canada)*)

Honorary Conference Chairman's Address: Mark Peters (*Laboratory Director, Idaho National Laboratory (United States)*)

8:15-10:00 am Advancing and Sustaining Nuclear Energy—Government Perspectives

Regulator Keynote Addresses: Kristine Svinicki (*Chairman, U.S. Nuclear Regulatory Commission (United States)*)
Ramzi Jammal (*Chief of Regulatory Operations, Canadian Nuclear Safety Commission (Canada)*)

Ministerial Keynote Addresses: Suzanne Jaworowski (*Senior Advisor for Nuclear Energy, Department of Energy (United States)*)
Marco Presutti (*Director General of the Electricity Resources Branch, Energy Sector (Canada)*)

10:00-10:15 am Refreshment Break in Exhibit Hall

10:15-10:45 am Conference Keynote Address: Nathan Myhrvold (*Vice Chairman of TerraPower, CEO and Co-founder of Intellectual Ventures, and former CTO of Microsoft*)

10:45 am-12:00 pm Advancing and Sustaining Nuclear Energy—Industry Perspectives

Industry Keynote Addresses: Bill Fox (*Executive Vice President for Global Nuclear Business, SNC-Lavalin (Canada)*)
Sang-Wook Han (*Executive Vice President, Korean Hydro and Nuclear Power (South Korea)*)
Lei Zengguang (*Chief Engineer, China National Nuclear Corporation (China)*)
Takuya Hattori (*Senior Advisor of Japan Atomic Industrial Forum, Inc. (Japan)*)
Dale Atkinson (*Chief Operating Officer and Chief Nuclear Officer, NuScale Power (US)*)

Opening Plenary Afternoon Session—I

Location: Bayview B

1:30-3:00 pm International Perspectives on Nuclear Energy Communications—Panel

Four communications experts in energy and science communications will discuss their best communications practices in a variety of cultures, situations and challenges. The session includes with a report on the results of the Pacific Nuclear Council's 2018 survey of nuclear energy communicators throughout the Pacific Rim.

Moderator: Mimi Limbach (*Managing Partner, Potomac Communications (United States)*)

Timothy Ferris (*Award Winning Science Journalist Whose Work has Been Described by the Washington Post as "The Best Science Writer of his Generation." Professor Emeritus, University of California, Berkeley (United States)*)

John Barrett (*President and CEO, Canadian Nuclear Association (Canada)*)

Laura Hermann (*Partner, Potomac Communications Group (United States)*)

Kirsty Gogan (*Founder, Energy for Humanity (United Kingdom)*)

Plenary, Special Sessions & Events

MONDAY, OCTOBER 1 CONTINUED

Opening Plenary Afternoon Session–II

Location: Bayview B

3:30-5:00 pm The Millennial Nuclear Caucus Goes Global–Panel & Networking Session

Panelists will share their perspective on the future of nuclear, global issues for the nuclear industry, the importance of engaging young people in the nuclear field, and career opportunities. The panel will be followed by a speed-networking session led by international “speed-networkers”.

Introductory Remarks: Rita Baranwal (*Director for Gateway for Accelerated Innovation in Nuclear, Idaho National Laboratory (United States)*)

Moderator: Suzanne Jaworowski (*Senior Advisor, U.S. Department of Energy Office of Nuclear Energy (United States)*)

Lenka Kollar (*Director for Business Strategy, NuScale Power (United States)*)

Grace Meikle (*Director for International Business Development, Canadian Nuclear Laboratories (Canada)*)

Ayako Takeuchi (*Attaché to the United States of America, Embassy of Japan (Japan)*)

Joon Seok Kang (*Operations Training Support Specialist, UAE Barakah Project (Korea)*)

Wei Jiang (*Product Manager, Nuclear Advanced Safety Platform I&C, Nuclear Power Institute of China (China)*)

TUESDAY, OCTOBER 2

Advancing Nuclear Energy Morning Session–I

Location: Ballroom B/C

8:00-8:10 am Introductory Remarks by Advancing Nuclear Energy General Chair

Rita Baranwal (*Director for Gateway for Accelerated Innovation in Nuclear, Idaho National Laboratory (United States)*)

8:10-9:45 am Advancing Nuclear Energy - The Path Forward

What are leading nuclear energy research, policy and industry organizations around the world doing to advance nuclear technology? This panel will address this question by featuring speakers that support research and policy around the development of advanced reactors from around the globe.

Moderator: David Blee (*President, Nuclear Industry Council and member of U.S. Department of Energy Nuclear Energy Advisory Committee (United States)*)

Adi Paterson (*CEO, Australian Nuclear Science & Technology Organization (Australia)*)

Sue Ion (*Chair, UK Nuclear Innovation Research Advisory Board (United Kingdom)*)

Jon Ball (*Executive VP for Nuclear Energy, GE-Hitachi (United States)*)

Takashi Kiyoura (*Director, Atomic Energy Division, MEXT (Japan)*)

Gina Strati (*Director for Energy Programs, Canadian Nuclear Laboratories (Canada)*)

Advancing Nuclear Energy Morning Session–II

Location: Ballroom B/C

10:15 am-12:00 pm Advancing Nuclear Energy – Technology Leadership

Learn from our panelists of leading nuclear professionals as they share industry insights, scientific knowledge and the latest technology advancing the nuclear industry. This panel will key technology players and vendors of small modular reactor designs.

Moderator: Corey McDaniel (*Vice President for Business Development, Canadian Nuclear Laboratories (Canada)*)

David Petti (*Author of MIT Future of Nuclear Energy Study, Idaho National Laboratory (United States)*)

Gordon Bryan (*Deputy Director, U.K. National Nuclear Laboratory (United Kingdom)*)

Dai Zhimin (*Deputy Director of SINAP (China)*)

Han Ok Kang (*Director of SMART Program, Korean Atomic Energy Research Institute (Korea)*)

Simon Irish (*CEO, Terrestrial Energy (Canada)*)

Ken Langdon (*Vice President Of Operations And Plant Services, Nuscale (US)*)

Plenary, Special Sessions & Events

WEDNESDAY, OCTOBER 3

Sustaining Nuclear Energy Morning Session—I

Location: Ballroom B/C

8:00-8:10 am Introductory Remarks by Sustaining Nuclear Energy General Chair

Bill Fox (*Executive Vice President for Global Nuclear Business, SNC-Lavalin (Canada)*)

8:10-9:45 am Sustaining Nuclear Energy – Utility Perspective

What do utilities say are the key factors for sustaining the global existing fleet? This panel will feature speakers from utilities around the globe, and will be moderated by Dr. Kathy McCarthy, Vice-President for Research and Development and Laboratory Director at Canadian Nuclear Laboratories.

Moderator: Dr. Kathy McCarthy (*Vice President for R&D and Laboratory Director Canadian Nuclear Laboratories (Canada)*)

Chuck Kharri (*Vice President of Site Operations, Arizona Public Service (United States)*)

Yunho Kim (*Director General, Central Research Institute, Korean Hydro and Nuclear Power (South Korea)*)

Chris Comfort (*Innovation and Technology Manager, Southern Nuclear (United States)*)

Norio Atsumi (*General Manager for Nuclear Energy, Federation of Electric Power Companies (Japan)*)

Frank Saunders (*President, Ontario Nuclear Innovation Institute (ONII) and Vice President, Regulatory Affairs, Bruce Power (Canada)*)

Sustaining Nuclear Energy Morning Session—II

Location: Ballroom B/C

10:15 am-12:00 pm Sustaining Nuclear Energy – Science & Technology Perspective

What critical science and technology underpins the sustainability of the global existing fleet? This panel will address this question by featuring experts from the global nuclear energy supply chain and research organizations.

Moderator: Gary Wolski (*past U.S. Civil Nuclear Trade Advisory Committee Chair and VP-Market Development for Curtiss-Wright's Nuclear Division(US)*)

Sherry Bernhoft (*Electrical Power Research Institute (United States)*)

Fred Dermarkar (*President, CANDU Owners Group (Canada)*)

Danrong Song (*Director for Research, Nuclear Power Institute of China (China)*)

Hirokazu Ofuji (*Marubeni Utility Services (Japan)*)

Bruce Hallbert (*U.S. Light Water Reactor Sustainability Program Director, Idaho National Laboratory (United States)*)

Ron Oberth (*President, Organization of Canadian Nuclear Industries (Canada)*)

Wednesday Gala Dinner

Time: 6:00-10:00 pm **Location:** Grand Ballroom

7:00-7:20 pm Welcome Address from Pacific Nuclear Council (changing of the gavel)

Speakers: Mimi Limbach (*Immediate Past President, Potomac Communications Group (U.S.)*)

Kamal Verma (*Incoming President, SNC-Lavalin (Canada)*)

Zhi Wang (*Incoming Vice-President, Chinese Nuclear Society (China)*)

The Gala will also feature a presentation about PBNC2020 by Javier Palacios (*President Mexican Nuclear Society*)

Every PBNC Gala offers a performance of its cultural heritage. In America, we love rock 'n roll music. The fabulous Dick Bright Orchestra will perform classics from decades of great rock 'n roll music. From Sinatra to Beyonce, this group plays it all.

THURSDAY, OCTOBER 4

UC Berkeley Nuclear Engineering Campus Technical Tour

9:00 am-2:30 pm

This tour of UC Berkeley Nuclear Engineering labs will visit laboratories for nuclear materials testing, thermal hydraulics, neutron generation, radiation detection and imaging, and computation, and meet students working in these laboratories. These laboratories perform research for a wide range of applications, including advanced reactor safety and licensing, materials reliability and performance for existing and advanced reactors, geochronology, and detection and imaging for medicine and nuclear security. The campus tour will highlight historical locations around the campus, including Gilman Hall where Glenn Seaborg discovered plutonium. You must be registered for PBNC 2018 to purchase a ticket. Board the bus for the tour at the Market Street Foyer Exit at 8:45 am.

MONDAY, OCTOBER 1

TECHNICAL SESSIONS – 1:30 PM

Probability Risk Assessment, Safety, and Control Systems

Session Chair: Jordi Roglans-Ribas (*ANL*)

Location: Seacliff A **Time:** 1:30-2:45 pm

- 1:30 pm:** PSA-Based Design Extension of Existing PWR Plant and Application in the Design of Advanced PWR Plant, Wenkui Lu, Jing Liu, Jinlong Sun, Chao Ma, Xinli Yu (*CNPE*)
- 1:55 pm:** Evaluation on the PSA Digital and Analog Instrumentation and Control System in Advanced Nuclear Power Plant, Zhuo Chen, Jian Yang, Wei Deng (*CNPE*)
- 2:20 pm:** Control System Software Common Cause Failure Analysis for APR1400, Jong-Cheol Park, Min Shin Jung, Jong Ho Choi, Gyu Cheon Lee (*KEPCO E&C*)

Reactor Safety Analysis Methodologies and Codes—I

Session Chair: Roberto Ponciroli (*ANL*)

Location: Seacliff B **Time:** 1:30-2:50 pm

- 1:30 pm:** Comparative Analysis of Different Configurations to Enhance the ESBWR Passive Cooling Systems, J. Manuel Gallardo-Villarreal (*Univ Politécnica Metropolitana de Hidalgo*), Emilio Martinez-Camacho, Raymundo A. Sánchez-Salazar, Jamie B. Morales-Sandoval (*Univ Nacional Autónoma de Mexico*), Julio Valle-Hernández (*Univ Politécnica Metropolitana de Hidalgo*)
- 2:10 pm:** LOCA Evaluation Considering Critical Flow Model with Uncertainty Parameters, Il Suk Lee (*KINS/Korea Univ*), Youngseog Bang, Deogyeon Oh (*KINS*), Yongchan Kim (*Korea Univ*)
- 2:30 pm:** Assessment of CATHARE Code Against LOCA Experiment, Peng Chuanxin, Zan Yuaneng (*Nuclear Power Inst of China*)

Nuclear Fuels and Fluid Dynamics

Session Cochairs: Shahab Dabiran (*OPG*), Seung Oh Jeong (*KEPCO NF*)

Location: Seacliff C **Time:** 1:30-3:10 pm

- 1:30 pm:** Feasibility Study on 24 Month Cycle Scheme for OPR1000 PWR, Seung-oh Jeong, Hye-young Jun, Sang-rin Shon (*KEPCO*), Sang-rae Moon, Ho-Cheol Shin (*KHNP*)
- 1:55 pm:** XeCorr Software Toolset—Locating Defected Fuel in CANDU Reactors Using Correlation Between Bundle Powers and XE-133 Activity, S. Dabiran (*OPG*)
- 2:20 pm:** Recent Operating Experience and Developments in the Ultrasonic Cross-Correlation Flow Measurement Technology—CROSSFLOW, Alexander Gurevich, Yuri Gurevich, Varun Kanda, Brendan Sharp, Ronald Quinsay (*Advanced Measurement & Analysis Group Inc.*), Victor Janzen, Muhammad Saleem (*CNL*)
- 2:45 pm:** The Application of cosFlow and cosKind in Nuclear Power Plant Simulation, Wang Xu, Li Yankai, Lin Meng (*Shanghai Jiao Tong Univ*), Wang Su (*State Nuclear Power Research Inst*), Yang Yanhua (*Shanghai Jiao Tong Univ*)

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MONDAY, OCTOBER 1 TECHNICAL SESSIONS – 1:30 PM

Advanced Chemistry and Processing Options

Session Chair: Bill Wilmarth (*SRNL*)

Location: Seacliff D **Time:** 1:30-2:45 pm

1:30 pm: Pyroprocessing: A Practical Solution to Spent Fuel Management, Yoon Il Chang (*ANL*)

1:55 pm: Study on Suppression of TRU Production by Adding Poison Materials, Satoshi Takeda, Takanori Kitada (*Osaka Univ*)

2:20 pm: A Review of Technology Development for the Treatment of Radioactive Concrete Waste, Keun-Young Lee, Maengkyo Oh, Bum-Kyoung Seo (*KAERI*)

Advances in Light Water Cooled Reactors—I: Pressured Water Reactors

Session Chair: Mike Wright (*CNL*)

Location: Marina **Time:** 1:30-3:10 pm

1:30 pm: A Seismic Design Parameters and Seismic Analysis Methods of the APR1400, Jung-Bum Jang, Kwan-Hee Yun (*Korea Electric Power Corporation Research Inst*), Sung-Ho You, Yong-Sun Lee (*KEPCO*), Sun-Guk Kwon, Yun-Ho Kim (*Korea Hydro-Nuclear Power Central Research Inst*)

1:50 pm: Evolution from APR1400 for European Markets, Ji Hwan Kim, Yong Soo Kim, Keun Seong Lee, Han Gon Kim (*KHNP*)

2:10 pm: Hard-Rock High-Frequency Response Spectrum of the APR1400, Kwan-Hee Yun, Jung-Bum Jang (*Korea Electric Power Corporation Research Inst*), Sung-Ho You, Yong-Sun Lee (*KEPCO*), Sun-Guk Kwon, Yun-Ho Kim (*Korea Hydro-Nuclear Power Central Research Inst*)

2:30 pm: Parametric Study on Loss of Condenser Vacuum Accident in APR1400 Using SPACE Code, Dae-Hun Kim, Suk-Ho Lee (*KHNP*) - **CANCELED**

2:50 pm: Convergence Studies Using Method of Characteristics Solver for the Reduced-Moderation Water Reactor Model, Syed Bahauddin Alam (*Univ of Cambridge*), Bader Almutairi (*Missouri Univ Sci Tech*), Dinesh Kumar (*Uppsala Univ*), Cameron S. Goodwin (*Rhode Island Nuclear Science Center*), Saeed A. Alameri (*Khalifa Univ of Science and Technology*)

Fuel, Core, and Related Topics—I

Session Chair: Juan-Luis Francois (*UNAM*)

Location: Golden Gate **Time:** 1:30-2:45 pm

1:30 pm: Uranium Dioxide Based Castable Refractory Materials, David D. Tolman, Ken C. Marsden, James A. King, Kevin D. Lamont, Stephen A. Warmann (*INL/BEA*)

1:55 pm: Development of Pin-Wise Cross Section Functionalization, Chae Ho Lim, Joo Il Yoon (*KEPCO Nuclear Fuel Co.*)

2:20 pm: Benchmarking Calculation of a Soluble-Boron-Free SMR Lattice Model Using Deterministic, Hybrid Monte Carlo and Monte Carlo Codes, Bader Almutairi (*Missouri Univ Sci Tech*), Syed Bahauddin Alam (*Univ of Cambridge*), Cameron Goodwin (*Rhode Island Nuclear Science Centre*), Shoaib Usman (*Missouri Univ Sci Tech*)

MONDAY, OCTOBER 1

TECHNICAL SESSIONS – 3:30 PM

Recent Advances in Nuclear Security

Session Chair: Richard Vilim (*ANL*)

Location: Seacliff A **Time:** 3:30-4:45 pm

- 3:30 pm:** Generation III Commercial Nuclear Reactor Cybersecurity, Marlene Z. Ladendorff (*INL*)
- 3:55 pm:** The IEC Standard Series on Cybersecurity for Nuclear Power Plants, Edward L. Quinn (*Technology Resources*), Ludovic Pietre-Cambacedes (*EdF*), Thomas Walter (*Preussen Elektra*), Juergen Bochtler (*Siemens AG*), Richard Wood (*Univ of Tennessee*)
- 4:20 pm:** DNA (Detecting Neutron Agent) Signature of Explosives, Chemical Warfare and Biological Agents with the Application of Polyenergetic Gammas Emitted from a Deuterium Ion Injector, Yasser R. Shaban (*Guangdong Provincial Strategic Alliance of Med. Devices Innovation*)

Advances in Nuclear Materials Safety

Session Chair: Jess Gehin (*INL*)

Location: Seacliff B **Time:** 3:30-5:10 pm

- 3:30 pm:** Experimental Study on High Emissivity Thicker Oxide Zr-2.5Nb Pressure Tube Material, R. W. L. Fong, M. Paine, T. Nitheanandan (*CNL*)
- 3:50 pm:** ECCS Strainer Performance Testing—Lessons Learned and Best Practices, Ludwig C. Haber (*Alden Research Laboratory, Inc.*)
- 4:10 pm:** Microstructure and Mechanical Behavior of FeCrAl and Mo Coated Zr Substrate by Cold-Spraying Process, Dong Jun Park, Hyun Gil Kim, Yang Il Jung, Jung Hwan Park, Jae Ho Yang, Yang Hun Koo (*KAERI*)
- 4:30 pm:** An Experimental Investigation of FI and CHF on Two Parallel Rectangular Channels, Xiaozhong Liu, Xiaohong Wu, Yanping Huang (*Nuclear Power Inst of China*)
- 4:50 pm:** Performance Evaluation of Wall Climbing Sensor Carrier for Dry Concrete Cask Storage System, Kyoung Won Yoon, Jin Yoo, Misuk Jang, Seoung Rae Kim (*NESS*)

Enabling Long Term Operations

Session Cochairs: Bruce Hallbert (*INL*), Kevin McCaugherty (*CNL*)

Location: Seacliff C **Time:** 3:30-5:10 pm

- 3:30 pm:** Overview of the U.S. Department of Energy Light Water Reactor Sustainability Program, Bruce P. Hallbert (*INL*)
- 3:55 pm:** In-Cell Testing of Highly Irradiated Ni Alloy Components to Support Long-Term Operation of CANDU Nuclear Power Plants, Kevin McCaugherty, Colin Judge, Youqing Sha, David Poff (*CNL*)
- 4:20 pm:** Focus Topics in Relicensing of Pickering Nuclear Power Plant as it Approaches the End of Commercial Operation, H. Overton, A. Viktorov, (*Canadian Nucl Safety Comm*)
- 4:45 pm:** Investigations of In-Plane Fluidelastic Instability of a Multi-Span U-Bend Tube Array, Bruce Smith, Paul Feenstra, Teguewinde Sawadogo, Victor Janzen, Anne Wice (*CNL*), Helen Cothron (*EPRI*)

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MONDAY, OCTOBER 1
TECHNICAL SESSIONS – 3:30 PM

Advances in Radionuclide Analysis in Support of Decontamination and Decommissioning

Session Chair: Ian Castillo (CNL)

Location: Seacliff D **Time:** 3:30-5:10 pm

- 3:30 pm:** Activity Reconstructed for Segmented Gamma Scanner Based on Efficiency Matrix Calibration, Li Zhigang (Chengdu Univ of Technology), Tuo Xianguo (Sichuan Univ of Science & Eng), Shi Rui, Yang Jianbo (Chengdu Univ of Technology), Liu Yuqi (Southwest Univ of Science and Technology), Zheng Honglong (Sichuan Univ of Science and Eng), He Aijing (Chengdu Univ of Technology)
- 3:55 pm:** In Situ Characterization by Autoradiography for Dismantling, P. Fichet, S. Leblond (CEA)
- 4:20 pm:** A Portable Quantitative High-Resolution Gamma System for Waste, D&D, and Emergency Measurements, Frazier Bronson (Mirion Technologies (Canberra), Inc.)
- 4:45 pm:** Fukushima Nuclear Fuel Debris Component Analysis by Spectral CT Method with Portable High Energy X-Ray Source, Issei Ozawa, Junya Fukuoka, Yuki Mitsuya, Katsuhiro Dobashi, Mitsuru Uesaka, Kenji Shimazoe, Hiroyuki Takahashi, Hiroaki Abe, Tomooki Shiba (Univ of Tokyo)

Advances in Light Water Cooled Reactors—II: Integral PWRs

Session Chair: Bruce Smith (CNL)

Location: Marina **Time:** 3:30-5:10 pm

- 3:30 pm:** The Canadian Nuclear Safety Commission's Readiness to Regulate Small Modular Reactors, K. W. Lee (Canadian Nucl Safety Comm)
- 3:50 pm:** Neutronic Study of the NuScale Core with Different Fuel Types, Sadiel Pino Medina, Juan-Luis François (UNAM)
- 4:10 pm:** A PWR-Based SMR Core Design Using Nitride Kernel FCM Fuel and Graphite-Based Solid Reflector, Na Yeon Seo, Ser Gi Hong (Kyung Hee Univ)
- 4:30 pm:** 3D Modeling of Reduced-Moderation Water Reactor Lattice for P0 and P1 Scattering Approximations Using Deterministic and Monte Carlo Codes, Syed Bahauddin Alam (Univ of Cambridge), Bader Almutairi (Missouri Univ Sci Tech), Dinesh Kumar (Univ of Cambridge), Cameron S. Goodwin (Rhode Island Nuclear Science Center), Saeed A. Alameri (Khalifa Univ of Science and Technology)
- 4:50 pm:** Assessment of CHF Models in System Code Against Experiment Data at SMR Operation Conditions, Jun Yang, Chuan He (Huazhong Univ of Science and Technology)

Fuel, Core, and Related Topics—II

Session Chair: Cecilia Martin-del-Campo (UNAM)

Location: Golden Gate **Time:** 3:30-4:45 pm

- 3:30 pm:** Conceptual Design of Fuel Cycle based on Light-Water-Reactor with Surplus Enriched Uranium for TRU-Production Inhibition, Satoshi Wada, Rei Kimura, Kenichi Yoshioka, Shungo Sakurai, Kouji Hiraiwa, Tsukasa Sugita (Toshiba Energy Systems & Solutions Corp.)
- 3:55 pm:** The Nuclear Science User Facilities (NSUF) Impact on Fuel Cycle Research, J. Keith Jewell (INL)
- 4:20 pm:** CFD Analysis for U Extraction in a Centrifugal Contactor, Yuichi Sano, Atsushi Sakamoto, Hirohide Kofuji, Masayuki Takeuchi (JAEA)

TUESDAY, OCTOBER 2

TECHNICAL SESSIONS – 12:00 PM

Poster Session

Location: Grand Ballroom B/C **Time:** 12:00-1:30 pm

1. An Improved OSEM Iterative Reconstruction Algorithm for Transmission Tomographic Gamma Scanning Image, He Aijing (*Chengdu Univ of Technology*), Tuo Xianguo (*Sichuan Univ of Science & Eng.*), Shi Rui (*Southwest Univ of Science and Technology*), Zheng Honglong (*Sichuan Univ of Science & Eng*)
2. Research and Development of PVA-KI Gel Dosimeter, Yutaro Aoki (*Fukui Univ of Technology*), Glenn Harvel (*Univ of Ontario Inst of Tech*), Taguchi Mitsumasa, Naotsugu Nagasawa (*QST Takasaki Advanced Radiation Research Inst*), Toshiharu Sakura (*Nuclear Technology Inc.*), Takeyoshi Sunagawa (*Fukui Univ of Technology*)
3. Redesigning the CANFLEX® Fuel Bundle to Support CANDU® Fuel Development, C. Cavanagh-Dollard, D. Wowk, P. Chan (*Royal Military College of Canada*)
5. Applications of Continuous Gamma Spectral Measurements in Operational Nuclear Reactors and Those Undergoing Decommissioning, Frazier Bronson (*Mirion Technologies - Canberra*), Carola Gregorich (*EPR1*)
6. Development of Radioactive Water Decontamination Equipment Using Microalgae, Dohyung Kim, Taeyoung Kim, Unjang Lee (*ORION EnC*), Sang-Hyo Lee, Seung-Yop Lee (*Sogang Univ*)
7. Dependencies of Flow Velocity on Migration Behavior of Radionuclides in an Unsaturated Zone Around Near-Surface Underground, Takenori Ozutsumi, Yuichi Niibori, Taiji Chida (*Tohoku Univ*)
8. Verification and Validation of Simulation Models for Residual Radioactive Contamination from Decommissioning Nuclear Power Plants, Huai-En Hsieh, Hui-Fang Miao (*Xiamen Univ*), Mei-Shiue Chen, Yen-Cheng Liu (*Natl Tsing Hua Univ*)
9. Integration of Prognostic Techniques and Probabilistic Safety Assessment (PSA) for Online Risk Monitoring, Vivek Agarwal (*INL*)
10. Requirements Based Decommissioning Process and Activity Diagram Design of Nuclear Facilities, Sun-Kee Lee, Heon Kim, Chang-Lak Kim, (*KINGS*)
12. Performance Prediction of Irradiated TREAT Fuel, Adam Zabriskie (*INL*)
13. Bison Nuclear Fuel Performance Code, Russell Gardner (*INL*)
14. Applications of Bison to Advanced Reactor Fuel, Richard Williamson (*INL*)
15. Continuing Development of the Industry-Leading MOOSE Modeling and Simulation Framework, Richard Martineau (*INL*)
16. Advanced Reactor Physics Modeling and Simulation Capabilities Using MAMMOTH, Mark DeHart (*INL*)
17. Development of a Research-Scale Thorium/Actinium Generator at the Canadian Nuclear Laboratories, Patrick Causey (*CNL*)
18. CNL's Strategic Initiative for Sustainable Decommissioning and Waste Management, Ian Castillo (*CNL*)
19. The Effect of Atmospheric Chloride Deposition on the Dry Storage Canisters in Taiwan Coastal Region, Clinton Fong, Yi-Ching Lee (*Industrial Technology Research Technology*), Chih-Tien Liu, Kuo-Chen Yen (*Atomic Energy Council*)
20. Digital Engineering Ecosystem for Innovative Nuclear Technologies, Christopher Ritter (*INL*)

TECHNICAL SESSIONS – 1:30 PM

Enabling Advanced Reactors

Session Chair: Rita Baranwal (*Director of GAIN, INL (United States)*)

Location: Bayview B **Time:** 1:30-3:00 pm

This panel will discuss the non-technical enabling factors for advanced reactors and the issues that may be limiting their success.

Panelists: The Honorable Jeffrey S. Merrifield (*Partner and Energy Section Leader, Pillsbury Law (United States)*)
Ming Jiao (*Acting Director of the Department of Component Research and Design, Shanghai Nuclear Engineering Research and Design Institute (China)*)
Dave Petti (*Author of MIT Future of Energy Study, INL (United States)*)
Jennifer Uhle (*Director of Reactor Safety Programs, Jensen Hughes (United States)*)

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TUESDAY, OCTOBER 2
TECHNICAL SESSIONS – 1:30 PM

Policy and Regulatory Approaches to Nuclear Safety

Session Chair: Monica Regalbuto (*INL*)

Location: Seacliff A **Time:** 1:30-3:10 pm

- 1:30 pm:** Lessons Learned from the Development of the Reactor Oversight Process (ROP) in the United States and Their Application to Other Countries, Hiroko Kondo (*Matrix K LLC*)
- 1:55 pm:** Overview of Classification Requirements in Canadian Codes and Standards for Nuclear Power Plants, Suqiang Xu, Christopher Cole (*Canadian Nucl Safety Comm*)
- 2:20 pm:** Lessons Learned from Implementation of NUREG/CR-7150 Vol. 3 (JACQUE-FIRE), Franklin Hope, Andrew Ratchford, Dane Lovelace (*Jensen Hughes*), Jaiho Lee (*KHNP Central Research Inst*)
- 2:45 pm:** Radiation Screening and Adverse Event Prevention at 2017 Taipei Summer Universiade, Yuan Ko, Tze-Chieh Horng, Juneyuan Huang (*Atomic Energy Council*)

Design Certification and Construction

Session Chair: Ronaldo H. Szilard (*INL (United States)*)

Location: Seacliff B **Time:** 1:30-3:10 pm

- 1:30 pm:** Mechanical Integrity Verification of PLUS7™ Fuel for APR1400 NRC Design Certification, Ilkyu Kim, Yonghwan Kim, Sangyoun Jeon, Hakin Lee, Heonjeong Ha, Hongjin Kim, Ohhyun Kwon, Chang-Sok Cho, Jaehoon Jeong (*KEPCO NF*), Yunho Kim (*KHNP*)
- 1:55 pm:** Qualification of KCE-1 CHF Correlation for APR1400 NRC Design Certification, KangHoon Kim, KeeYil Nahm, JongSeon Lim, ChaeJoon Lim, ChangSok Cho (*KEPCO NF*), YunHo Kim (*KHNP*)
- 2:20 pm:** Best Estimate Large-Break LOCA Analysis Methodology for APR1400 NRC Design Certification, JuHyun Park, JaeHoon Jeong, WooChong Chon, TongSoo Choi, ChangSok Sok Cho (*KEPCO NF*), Yunho Kim (*KHNP*)
- 2:45 pm:** APR1400 Design Features for the U.S.NRC Design Certification, Jeongkwan Suh, Yunho Kim (*KHNP CRI*)

Recent Advances in Plant Digitization

Session Chair: Richard Vilim (*ANL*)

Location: Seacliff C **Time:** 1:30-2:45 pm

- 1:30 pm:** Application of Data Analytics for Digital Monitoring in Nuclear Plants, Vivek Agarwal, Pradeep Ramuhalli, Ahmad Al Rashdan, Ronald Boring (*INL*)
- 1:55 pm:** Smart Procedures in the Nuclear Power Industry, Billy T. Baker, Jr., Bill Cronin (*Lean Power*)
- 2:20 pm:** Automating O&M Monitoring Using Physics-Based Qualitative and Quantitative Reasoning, R. B. Vilim (*ANL*)

TUESDAY, OCTOBER 2

TECHNICAL SESSIONS – 1:30 PM

Advances in Fuel Storage Options and Review of Challenges—I

Session Chair: Bill Wilmarth (*SRNL*)

Location: Seacliff D **Time:** 1:30-3:10 pm

- 1:30 pm:** Characteristics of Chloride Deposits in a Nuclear Spent Fuel Dry Storage System, Chi-Ming Lai, Ting-Yi Wang (*National Cheng Kung Univ*), Heui-Yung Chang (*Kaohsiung National Univ*)
- 1:55 pm:** Neutron Emission Analysis from Spontaneous Fission and Alpha Decay in a Filled Dry Storage Cask, Noah McFerran, Andreas Enqvist (*Univ of Florida*)
- 2:20 pm:** A Virtual Efficiency Calibration Method of Segmented Gamma Scanning for Measuring Radioactive Waste Drum, Honglong Zheng (*Southwest Univ of Science and Technology*), Xianguo Tuo (*Sichuan Univ of Science & Engineering*), Rui Shi, Zhigang Li, Aijing He (*Chengdu Univ of Technology*)
- 2:45 pm:** Application of an Integrated Approach to Achieve Best in Class Safety, Security and Safeguards Standards for 21st Century Decommissioning, Dismantlement and Environmental Remediation Projects, Mark Campagna (*Security Consultant*), Walter Sawruk (*ABS Consulting*), Joseph Scerbo (*Sargent & Lundy*)

Novel Reactor Concepts and Licensing Novel Reactors

Session Chair: Charles Forsberg (*MIT*)

Location: Marina **Time:** 1:30-3:10 pm

- 1:30 pm:** Determining Appropriate Licensing Strategies for Novel Nuclear Technologies in Canada, S. Herstead, D. Miller, M. de Vos (*Canadian Nucl Safety Comm*)
- 1:50 pm:** Fluoride-Salt-Cooled High-Temperature Reactor (FHR) Using British Advanced Gas-Cooled Reactor (AGR) Geometry and Refueling Technology, Charles Forsberg (*MIT*), Dean Wang (*Univ of Massachusetts Lowell*), Eugene Shwageraus (*Univ of Cambridge*), Brain Mays (*Framatome*), Geoff Parks (*Cambridge Univ*), Carolyn Coyle (*MIT*), Maolong Liu (*Univ of New Mexico*)
- 2:10 pm:** Pebble Bed Reactors (FHR, HTGR, and MSR) with Two Pebble Sizes for Fuel Management, Charles W. Forsberg (*MIT*), Per F. Peterson (*Univ of California, Berkeley*)
- 2:30 pm:** Dynamical Modeling of Six-Modular High Temperature Gas-Cooled Reactor Unit HTR-PM600, Zhe Dong, Zuoyi Zhang, Yujie Dong, Xiaojin Huang (*Tsinghua Univ*)
- 2:50 pm:** Temperature Reactivity Control Methodology for Hydride-Moderated Small Reactors with Poison Nuclides, Rei Kimura, Satoshi Wada (*Toshiba Energy Systems & Solutions Corp.*)

Communication Impact of New Nuclear Technologies and Uses

Session Chair: Bethel Afework (*Univ of Calgary*)

Location: Golden Gate **Time:** 1:30-3:10 pm

- 1:30 pm:** Engaging the Public on the Building the First Small Modular Reactor—A Case Study: The Lab's Leadership Role in Idaho, Amy Lientz (*INL*)
- 1:55 pm:** Lessons Learned from Safeguards Implementation for Facilities Under Construction, S. Poirier, J. Whitlock, B. Boyer, K. Baird (*IAEA*)
- 2:20 pm:** Community and Siting Impacts on Small Modular Reactor Operability and Design, Glenn Harvel (*Univ of Ontario Inst of Tech*)
- 2:45 pm:** Potential for Reduction in Emissions by U.S. Industries While Meeting Thermal Energy Demand, P. Sabharwall, M. McKellar (*INL*), C. McMillan (*National Renewable Energy Laboratory*), R. Boardman, S. M. Bragg-Sitton (*INL*), M. Ruth (*National Renewable Energy Laboratory*)

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TUESDAY, OCTOBER 2 TECHNICAL SESSIONS – 3:30 PM

Advancing Nuclear Medicine

Session Chair: Saed Mirzadeh (*Oak Ridge National Laboratory (United States)*)

Location: Bayview B **Time:** 3:30-5:00 pm

This panel will discuss recent advances and challenges in nuclear medicine, with a focus on medical isotope production and targeted therapies.

Panelists: Patrick Causey (*Canadian Nuclear Laboratories (Canada)*)

Adi Paterson (*CEO of Australia Nuclear Science & Technology Organization (Australia)*)

Gordon Bryan (*Deputy Director for Nuclear Innovations & Research, National Nuclear Laboratory (UK)*)

Rebecca Abergel (*Lawrence Berkeley National Laboratory (United States)*)

Henry VanBrocklin (*Professor of Biology and Director of Radiopharmaceutical Research, University of California San Francisco (United States)*)

Reactor Safety Analysis, Methodologies, and Codes—II

Session Chair: Jess Gehin (*INL*)

Location: Seacliff A **Time:** 3:30-4:45 pm

3:30 pm: A Study on Thermal Transient Phenomena for Check Valve of Safety Injection System, IiHwan Kim, Kunwoo Lee, Joohee Lee, Kyungin Ju, Seongchan Park (*KEPCO E&C*)

3:55 pm: Design of a Natural Circulation Loop for Molten Salt Coolant Studies, Glenn Harvel, Richard Carlisle, Kevin Cordy, Ryan Murphy-Snow (*Univ of Ontario Inst of Tech*)

4:20 pm: Time-Space Fractional Neutron Point Kinetics with Temperature Feedback Effects, E. G. Espinosa-Martinez, J. L. François, C. Martín-del-Campo (*UNAM*)

Construction and International Considerations

Session Chair: The Honorable Jeffrey S. Merrifield (*Partner and Energy Section Leader, Pillsbury Law (United States)*)

Location: Seacliff B **Time:** 3:30-4:20 pm

3:30 pm: Construction Sequence Analysis of Common Basemat in NPP, Hyun-ho Lee, Young-hoon Kim, Sung-ho You (*KEPCO E&C*)

3:55 pm: Construction and Commissioning Experience of the First APR1400, Shin-Kori Unit 3, Jong Tae Seo, Eung S. Kim, Seung S. Baek, Ju H. Lee, In H. Song, Young S Sul, Gyu C. Lee, Tae C. Park (*KEPCO E&C*)

Technologies for Power Operations

Session Cochairs: Jong Yeob Jung (*KAERI*), John Moore (*CANDU Owners Group Inc.*)

Location: Seacliff C **Time:** 3:30-5:10 pm

3:30 pm: Collaboration Within the CANDU Community and Beyond, John H. Moore (*CANDU Owners Group*)

3:55 pm: Evaluation of Diameter Expansion of CANDU Pressure Tubes for BEI and BEO Channels, Jong Yeob Jung (*KAERI*)

4:20 pm: Reduction of Ecological Risk due to Hydrazine Use at Nuclear Power Plants in Canada, Duck Kim (*Government of Canada-Environment and Climate Change*), Hemendra Mulye, Slobodan Jovanovic (*Canadian Nucl Safety Comm*)

4:45 pm: Regulatory Experience on Flexible Power Operation Application, Yu-Jen Huang, Keng-Yen Chiang, Song-Nan Tsau, Ming Tong Hsu, Jec-Kong Gone, Bin Kao, Chi-Szu Lee, Shin Chang (*AEC*)

TUESDAY, OCTOBER 2

TECHNICAL SESSIONS – 3:30 PM

Advances in Fuel Storage Options and Review of Challenges—II

Session Chair: Shannon Chu (*EPRI*)

Location: Seacliff D **Time:** 3:30-5:10 pm

- 3:30 pm:** Management and Interim Storage Options for Radwaste Pending Availability of a Disposal Center, Christelle Décanis, Hervé Lamotte, Eric Fillion, Dominique Carre, Christophe Icard, Vincent Cano, Sabine Chaix, Véronique Fédérici, Daniel Canas (*CEA*)
- 3:55 pm:** Regulatory Control on Spent Fuel Dry Storage of Chinshan NPP in Taiwan, Hsiao-Ching Tseng, Yen-Liang Lee (*AEC*)
- 4:20 pm:** Dry Cask Storage Welded Stainless Steel Canister Breach Consequence Analysis, Shannon Chu (*EPRI*)
- 4:45 pm:** Safety Analyses for Installing Fuel Storage Racks in Cask Loading Pool at Kuosheng Nuclear Power Station, Ping-Hue Huang (*Taiwan Power Co.*)

Innovative Technologies for Advanced Reactors

Session Chair: Hussein Khalil (*ANL*)

Location: Marina **Time:** 3:30-5:10 pm

- 3:30 pm:** Assured Peak Nuclear Generating Capacity with Heat Storage and Auxiliary Combustible Fuels, Charles W. Forsberg (*MIT*)
- 3:55 pm:** Pressure Drop and Heat Transfer Characteristics of Printed Circuit Heat Exchanger Using CFD Simulations, AiWei Xu, Yan-Ping Huang (*Nuclear Power Inst of China*)
- 4:20 pm:** Expanded Keyboard-Video-Mouse (KVM) Technology Implementation for Advanced Reactors, Richard Turk (*Technology Resources*), Richard Cooper (*Thinklogical LLC*), Wei Lai (*Sanmen Nuclear Power Plant*)
- 4:45 pm:** The Thermal Influences for Data Transport of Nuclear Grade Optical Fibers, Huai En Hsieh (*Xiamen Univ*), Mei-Shiue Chen (*National Tsing Hua Univ*)

Promoting Nuclear Energy Education

Session Chair: Kirsty Gogan (*Energy for Humanity*)

Location: Golden Gate **Time:** 3:30-4:45 pm

- 3:30 pm:** Education in Nuclear Science for National Development: Experience from Ghana, Aba Bentil Andam, Paulina Ekua Amponsah, Irene Opoku-Ntim (*Ghana Atomic Energy Commission*)
- 3:55 pm:** Unique and Innovative Public Outreach, Chris Wolfe, Christine Johnson, Lee Causey (*NAYGN*), invited
- 4:20 pm:** Bringing Nuclear Science Experiments to the Classroom, Eric B. Norman (*Univ of California, Berkeley*)

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WEDNESDAY, OCTOBER 3

TECHNICAL SESSIONS – 1:30 PM

Sustainable Approaches to the Nuclear Fuel Cycle

Session Chair: Monica Regalbuto (*INL*)

Location: Bayview B **Time:** 1:30-3:00 pm

This panel will discuss how to promote reactor sustainability across the nuclear fuel cycle – including addressing challenges related to decommissioning and waste management.

Panelists: Shinjiro Takeda (*Director for International Nuclear Energy Cooperation, Ministry of Economy, Trade, and Industry (Japan)*) invited
Colin Jones (*Vice President and Deputy General Manager, Jacobs (United States)*)
Ian Castillo (*Manager for Analytical Chemistry Research, Canadian Nuclear Laboratories (Canada)*)

Severe Accident Management

Session Chair: Dong-Wook Jeong (*Chung-Ang Univ*)

Location: Seacliff A **Time:** 1:30-3:10 pm

- 1:30 pm:** Improvements Made to EDF MAAP 5.04 in Order to be Used as a Crisis Management Tool, Jeremy Bittan (*EdF*)
- 1:55 pm:** Seismic Damage by the Great East Japan Earthquake at Nuclear Power Stations, Kazuhiro Akimoto (*Teikyo Univ*)
- 2:20 pm:** Comparative Study of Prospective Corium In-Vessel Modeling with MAAP5.04 Code, Nikolai Bakouta (*EdF*)
- 2:45 pm:** Uncertainty Quantification of In-Vessel Hydrogen Generation in a Severe Accident of Advanced Boiling Water Reactor Using MAAP5 Code, Te-Chun Wang (*Natl Tsing Hua Univ/INER*), Min Lee (*Natl Tsing Hua Univ*)

Economics—I

Session Chair: Ramesh Sadhankar (*CNL*)

Location: Seacliff B **Time:** 1:30-3:10 pm

- 1:30 pm:** Development of a Cost Estimation Algorithm for Advanced Nuclear Reactor Concepts, F. Ganda, T. K. Kim, T. A. Taiwo (*ANL*)
- 1:55 pm:** New Perspectives on Advanced Reactors in Future Electricity Markets, R. B. Vilim, R. Ponciroli, F. Ganda, J. Ramsey (*ANL*)
- 2:20 pm:** A Study of Grid Reliability and Resilience, W. Neal Mann, Katrina Ramirez-Meyers, Samuel C. Johnson, Thomas A. Deetjen, Joshua D. Rhodes, Michael E. Webber (*Univ of Texas, Austin*), Tammie Borders, Ronaldo Szilard (*INL*)
- 2:45 pm:** Optimizing Non-Fuel O&M Costs for New Nuclear, Charles T. Goodnight (*Goodnight Consulting, Inc.*)

Advances in Engineering Design

Session Chair: Prof. Ihn Namgung (*KEPCO*)

Location: Seacliff C **Time:** 1:30-2:20 pm

- 1:30 pm:** Development of Advanced Reactor Inspection System Using Phased Array Ultrasonic Testing, Joon-hong Kim, Youn-kye Kim, Jung-bin Kim, Dong-il Kim, Min-su Park (*KEPCO KPS*)
- 1:55 pm:** Development of Computer Program for APR1400 SG U-Tube Layout and Tube-Sheet Dia. Determination for Triangular U-Tube Pattern, Mai Quy Sang, Ihn Namgung (*KINGS*)

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WEDNESDAY, OCTOBER 3

TECHNICAL SESSIONS – 1:30 PM

Recent Advances in World-Wide Decommissioning—

Session Chair: Gary Benda (*Waste Management, Inc.*)

Location: Seacliff D **Time:** 1:30-3:10 pm

- 1:30 pm:** In-Vessel Heat Transfer Characteristics Evaluation for Fukushima-Daiichi Decommissioning, Shuichiro Miwa, Nassim Sahboun (*Hokkaido Univ*)
- 1:50 pm:** APR1400 Design Enhancement to Minimize Contamination and Radioactive Waste Generation, Sangho Kang (*KEPCO E&C*), Irving Tsang (*DERADS*)
- 2:10 pm:** Decommissioning of a 2-MW Research Reactor, Dustin G. Miller (*Chase Environmental Group, Inc.*)
- 2:30 pm:** EPRI Research and Development Projects for NPP Decommissioning, Phung Tran, Richard McGrath, Richard Reid (*EPRI*)
- 2:50 pm:** Quantification of Decontamination Factors for Small Modular Reactors—Findings from Empirical Studies, Rohan Biwalkar, Sola Talabi (*Pittsburgh Technical*), Paul Fischbeck (*Carnegie Mellon Univ*), Ronald King (*EPRI*)

Enabling Advanced Reactors: Research Facilities

Session Chair: John Jackson (*INL*)

Location: Marina **Time:** 1:30-3:10 pm

- 1:30 pm:** VTR In-Pile Testing Capabilities to Support Development of Advanced Reactors, S. Balderrama, P. Sabharwall, A. Shigrekar, D. Wachs (*INL*)
- 1:50 pm:** Update on the U.S. Nuclear Science User Facilities, J. Rory Kennedy, Laura Scheele, Brenden Heidrich, Dan Ogden (*INL*)
- 2:10 pm:** Tradeoff Studies for a Versatile Fast Spectrum Test Reactor, F. Heidet (*ANL*), G. Youinou (*INL*), T. Fei, M. A. Smith (*ANL*), G. Palmiotti, S. Bays (*INL*)
- 2:30 pm:** Lessons Learned from Fast Flux Test Facility Experience, D. W. Wootan, R. P. Omberg (*PNNL*), C. Grandy (*ANL*)
- 2:50 pm:** Overview of the FASTER Test Reactor Concept, F. Heidet, C. Grandy, T. Sumner, R. N. Hill (*ANL*)

New Approaches to Nuclear Outreach

Session Chair: Kortny K. Rolston-Duce (*INL*)

Location: Golden Gate **Time:** 1:30-3:10 pm

- 1:30 pm:** An Online Encyclopedia Aiming to Shift the Discussion on Nuclear Power, B. Afework, S. A. Amin, J. M. K. C. Donev (*Univ of Calgary*)
- 1:55 pm:** Promoting Local Economic Development by Application and Research of Electron Accelerators, Jiang Huang, Mingwu Fan,, Tiaoqin Yu, Yongqian Xiong, Jun Yang (*Huazhong Univ of Science and Technology*)
- 2:20 pm:** The Young Generation Advocating for Nuclear, M. Mairinger (*OPG*)
- 2:45 pm:** Integrating Small Module Reactors and Renewable Energy: Attaining a Carbon-Free Grid, Sean F. Hagen (*Hagen Global Consulting LLC*)

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WEDNESDAY, OCTOBER 3

TECHNICAL SESSIONS – 3:30 PM

Addressing Challenges in the Global Nuclear Supply Chain -**CANCELED**

Session Chair: Margaret Harding (*4Factor Consulting*)

Location: Bayview B **Time:** 3:30-5:00 pm

A panel of policy experts from several nations of the Pacific Rim will be discussing some of the intricacies of doing business in the nuclear world from both sides (supply and demand). The goal of the panel is to help businesses in countries around the Pacific Rim be more successful in participating in the nuclear supply chain.

Panelists: Hiroshi Matsumoto (*Senior Coordinator for the Non-Proliferation, Science, and Nuclear Energy Division (Japan) invited*)

Jim Warden (*U.S. State Department (United States)*)

Diego Candano (*Nuclear Suppliers Group (NSG), Consultative Group Chair (Mexico) invited*)

Katie Strangis (*U.S. Department of Energy National Nuclear Security Administration (United States)*)

Sung Eun Kim (*Republic of Korea representative on the NSG (South Korea) invited*)

Technical Sessions: Wednesday October 3

Thermal Hydraulics

Session Chair: Jordi Roglans-Ribas (*ANL*)

Location: Seacliff A **Time:** 3:30-5:10 pm

- 3:30 pm:** Experimental and Theoretical Study on Flow Pattern Characteristics in Inclined Circular Tube, Tianzhou Xie, Jianjun Xu, Bingde Chen, Wei Bao (*Nuclear Power Inst of China*)
- 3:50 pm:** Thermal Hydraulic Design and Analysis of Advanced Nuclear Heating Reactor, Xie Heng, Xie Fei, Liang Weihong (*Tsinghua Univ*)
- 4:10 pm:** Modeling of Two-Phase Flows Through Horizontal Pipes with Bends at High Void Fractions, Q. Chen, K. Podila, Y. F. Rao, R. Bowden, S. K. Yang (*CNL*)
- 4:30 pm:** Numerical Investigation of Pressure Drop Characteristics in an Inclined Tube Bank of a Sodium-to-Sodium Heat Exchanger, Hyung Gyun Noh (*Pohang Univ of Science and Technology*), Jaehyuk Eoh (*KAERI*), Dong Eok Kim (*CAU*), Moo Hwan Kim (*Pohang Univ of Science and Technology*)
- 4:50 pm:** Research on CSNS Target Station Water Cooling System, Ning He, Bingyun Zhang, Huihong Liang, Congju Yao, Xiong Lin, Lin Fan, Yu Liu, Yaoda Wu (*CAS*), Yi Zhuang, Haifen Han (*China Inst of Atomic Energy*)

Economics—II

Session Chair: Milt Caplan (*MZConsulting Inc.*)

Location: Seacliff B **Time:** 3:30-5:10 pm

- 3:30 pm:** Development of a Monte Carlo-Based Economic Optimization Scheme for Nuclear Hybrid Energy System Power Dispatch, R. Ponciroli, F. Ganda, R. B. Vilim (*ANL*)
- 3:55 pm:** Energy Storage Coupled with VSMR for Remote Communities, M. A. Moore, N. Gnanapragasam (*CNL*)
- 4:20 pm:** Benchmarking of Economic Models for Nuclear Hydrogen Production, Ramakant Sadhankar, Lauralee Sopczak, Donald Ryland (*CNL*), Rami El-Emam, Ibrahim Khamis (*IAEA*)
- 4:45 pm:** The Prospects of Nuclear Power Technology Exports in the Pacific Basin Countries in the Aftermath of the 2011 Fukushima Accident, Jasmina Vujic (*Univ of California, Berkeley*)

Recent Advances in World-Wide Decommissioning—II

Session Chair: Gary Benda (*Waste Management, Inc.*)

Location: Seacliff D **Time:** 3:30-4:45 pm

- 3:30 pm:** Simulation of Robotic 3D Scanning for Dismantling of Nuclear Facilities, Sungmoon Joo, Jonghwan Lee, Dongjun Hyun, Ikjune Kim, Shinyoung Kang (*KAERI*)
- 3:55 pm:** Developing Standards and Guidelines for Decommissioning in Japan, K. Tanaka (*AESJ*)
- 4:20 pm:** Recovery and Utilization of Non-Standard Uranium Sources, Norman Garner, Robert Follett, Lance Stephens, Michael Scrimsher, Marie Pierre Valla, Noemi Jimenez-Carro (*Framatome*)

WEDNESDAY, OCTOBER 3

TECHNICAL SESSIONS – 3:30 PM

Heat-Pipe Reactors and Sodium-Cooled Reactor

Session Chair: Metin Yetisir (*CNL*)

Location: Marina **Time:** 3:30-5:10 pm

- 3:30 pm:** 5 MWt Heat Pipe-Cooled, Sodium Fast Micro-Reactor for Electricity Generation at Remote Sites, Andrew J. Hummel, James W. Sterbentz, John C. Kennedy (*INL*)
- 3:50 pm:** High-Temperature, Heat Pipe-Cooled, Fast Micro-Reactor Concept Using Stainless Steel and Uranium Oxide Fuel Elements, James W. Sterbentz, Andrew J. Hummel, John C. Kennedy, Axel M. Dion, Robert C. O'Brien, Richard N. Wright (*INL*), Michael G. McKellar (*Univ of Idaho*), Krishnam P. Ananth (*INL*)
- 4:10 pm:** Study on Heterogeneous Minor Actinide Loading Fast Reactor Core Concepts with Improved Safety, Kazuya Ohgama, Shigeo Ohki (*JAEA*), Takanori Kitada (*Osaka Univ*), Toshikazu Takeda (*Univ of Fukui*)
- 4:30 pm:** Development of a Control Strategy for the TWR Advanced Nuclear Power Plant, Baofu Lu, Eric Williams (*TerraPower*), Jerry Mauck, Edward L. Quinn (*Technology Resources*)
- 4:50 pm:** A Neutronic Design Study of Small Ultra-Long-Life SFR Core Using Serpent Heterogeneous Monte Carlo Calculation, Kyu Jung Choi, Yeonguk Jo, Ser Gi Hong (*Kyung Hee Univ*)

Advances in Nuclear Medicine

Session Chair: Sandra Bogetic (*Univ of California, Berkeley*)

Location: Golden Gate **Time:** 3:30-4:20 pm

- 3:30 pm:** Metaheuristic Optimization for Neutron Spectral Shaping for Boron Neutron Capture Therapy, Sandra Bogetic (*Univ of California, Berkeley*), James Bevins (*AFIT*), Jasmina Vujic (*Univ of California, Berkeley*)
- 3:55 pm:** A Multipurpose Inertial Electrostatic Confinement Fusion for Medical Isotopes Productions, Yasser R. Shaban (*Guangdong Provincial Strategic Alliance of Med. Devices Innovation*)

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Speaker Bios

SUNDAY, SEPTEMBER 30 MONDAY, OCTOBER 1

Keynote Speaker



Senator James Risch
(Welcome Address)
U.S. Senator for Idaho (US)

Senator Risch began his career in public service at the age of 27, when he was elected to two terms as Ada County prosecuting attorney. Following his tenure as president of the Idaho Prosecuting Attorneys Association, he served 11 elected terms in the Idaho State Senate. His time as senator was highlighted by his quick election to the leadership positions of majority leader and Senate president pro tempore, serving in the top two positions of Senate leadership for 19 of his 22 years. Senator Risch earned a Bachelor of Science degree in Forestry from the University of Idaho, and a Juris Doctor degree from the University of Idaho, College of Law. He served on Law Review and the College of Law Advisory Committee at the University of Idaho and has taught criminal law at Boise State University. He was a small business owner, a rancher/farmer and senior partner in the Risch Goss Insinger Gustavel Law firm at the time of his election to the U.S. Senate.

Opening Plenary Speakers



John E. Kelly
ANS President 2018-2019 (US)

Dr. John E. Kelly recently retired from the U.S. Department of Energy where he was the Chief Technology Officer in the Office of Nuclear Energy. He was responsible for establishing the strategic technical direction for the Office of Nuclear Energy's (NE's) research, development, demonstration, and deployment portfolios.

Prior to assuming the duties of Chief Technology Officer, he served as Deputy Assistant Secretary for Nuclear Reactor Technologies. His office was responsible for the civilian nuclear reactor research and development portfolio, which included programs on Small Modular Reactors, Light Water Reactors, and Generation IV reactors. Additional responsibilities included the design, development, and production of radioisotope power systems, principally for NASA missions.

In the international arena, Dr. Kelly chaired the Generation IV International Forum and former chair of the International Atomic Energy Agency's Standing Advisory Group on Nuclear Energy.

Prior to joining the Department of Energy in 2010, Dr. Kelly spent 30 years at Sandia National Laboratories, where he was engaged in a broad spectrum of research programs in nuclear reactor safety, advanced nuclear energy technology, and national security.

Dr. Kelly received his B.S. in nuclear engineering from the University of Michigan-Ann Arbor and his Ph.D. in nuclear engineering from the Massachusetts Institute of Technology.



Kathryn McCarthy
Vice President R&D and Laboratory Director, Canadian Nuclear Laboratories (Canada)

Dr. Kathryn McCarthy is Vice-President Research & Development and Laboratory Director for the Canadian Nuclear Laboratories. From February 2012 to January 2017 she was Director of Domestic Programs for Nuclear Science and Technology (NS&T) at the Idaho National Laboratory (INL), and the Director of the Light Water Reactor Sustainability Program Technical Integration Office for the U.S. Department of Energy Office of Nuclear Energy (DOE-NE). Prior to that she was Deputy Associate Laboratory Director for NS&T at INL, National Technical Director for the Systems Analysis Campaign for the DOE-NE Fuel Cycle R&D Program, and was involved in various other nuclear fission and fusion programs before that; she was employed at the INL for 25 years. She received her B.S. in Nuclear Engineering at the University of Arizona; M.S. and Ph.D. in Nuclear Engineering at the University of California, Los Angeles. Dr. McCarthy was a Guest Scientist at the Kernforschungszentrum in Karlsruhe, Germany, March-September 1989, worked in the Soviet Union with the Department of Energy US/USSR Young Scientist Program (September 1989-August 1990), at the Efremov and Kurchatov Institutes in Russia, and the Latvian Academy of Science in Latvia. Dr. McCarthy is a member of the American Nuclear Society (ANS), and has held multiple offices at the local and national level.



Mark Peters
Director, Idaho National Laboratory (US)

Dr. Mark Peters is laboratory director at Idaho National Laboratory (INL). He is responsible for management and integration of a large, multipurpose national laboratory, with a mission focus in nuclear energy, national and homeland security, and energy and environmental science and technology. He manages an organization of 4,200 staff and multiple nuclear and non-nuclear experimental facilities, with an annual budget of more than \$1 billion. Peters serves as a senior advisor to the U.S. Department of Energy on nuclear energy technologies and research and development programs, and nuclear waste policy. As a recognized expert in nuclear fuel cycle technologies and nuclear waste management, Peters is called upon frequently to provide expert testimony to Congress in formulation of policies for nuclear fuel cycles, nonproliferation and nuclear waste disposal. Peters was honored in 2015 as a Fellow of the American Nuclear Society for outstanding accomplishments in the area of nuclear science and technology. Peters serves as chairman of the National Laboratory Directors Council Executive Committee.

Speaker Bios

MONDAY, OCTOBER 1

Morning Session Speakers

Advancing and Sustaining Nuclear Energy – Government Perspective



Kristine Svinicki
Chairman, U.S. Nuclear Regulatory Commission (US)

Kristine L. Svinicki is an American nuclear engineer and current chairwoman of the Nuclear Regulatory Commission.

Kristine began her career as an energy engineer for the state of Wisconsin at the Wisconsin Public Service Commission. She worked as a nuclear engineer in the U.S. Department of Energy's Washington, D.C. Offices of Nuclear Energy, Science and Technology, and of Civilian Radioactive Waste Management, as well as its Idaho Operations Office. She served as a staff member on the Senate Armed Services Committee for Senator John Warner and Senator John McCain.

She was sworn in as a commissioner of the NRC on March 28, 2008, and for a second term ending June 30, 2017. She was designated chairwoman by President Donald Trump on January 23, 2017. On June 26, 2017, she was confirmed by the U.S. Senate to a five-year term as the NRC's chairperson.

Kristine earned a bachelor's degree in nuclear engineering from the University of Michigan in 1988.



Ramzi Jammal
Chief of Regulatory Operations, Canadian Nuclear Safety Commission (Canada)

Ramzi Jammal has worked for the Canadian Nuclear Safety Commission (CNSC) since 1998, holding progressively senior positions. He has accumulated over 35 years of experience in the nuclear industry, combining management skills with scientific expertise, and representing the CNSC in various international activities. These include the co-chairing of the IAEA Fukushima report, leading Canadian delegations to the Conventions of Nuclear Safety, and the Joint Convention on the Safety of Spent Nuclear Fuel Management and on the Safety of Radioactive waste management.

Currently, Mr. Jammal is the President of the Convention on Nuclear Safety as elected by the Contracting parties in 2016 and will continue the presidency until October 2018. He also sits on the IAEA Commission on Safety Standards. He was instrumental in the development and establishment of the IAEA Code of Conduct for the Safety and Security of Radioactive Sources, and the international categorization of radioactive sources. He also played a key role in ensuring that the recommendations of the International Commission on Radiation Protection complemented the CNSC's regulatory needs.

As the Chief Regulatory Operations Officer, he led the development of the CNSC regulatory action plan in response to the Fukushima Daiichi accident. He holds a Bachelor of Science in Engineering Physics, a Masters in Medical Physics and a Masters of Business Administration.



Suzie Jaworowski (Moderator Millennium Nuclear Caucus Goes Global)
Senior Advisor Nuclear Energy U.S. Department of Energy (US)

In her role as Chief of Staff and Senior Advisor in the Office of Nuclear Energy, Suzanne serves as the Political Liaison between the Office of Nuclear Energy and the Secretary of Energy, as well as the White House. She provides political and strategic leadership to the office and manages outreach and educational efforts in the area of civil nuclear energy. Prior to her role with the U.S. Department of Energy, Suzanne served as the Indiana State Campaign Director for the Trump Pence campaign. The Indiana campaign had historic results in being the first to report a win for the President in the General Election; as well as the state that secured enough delegate votes for President Trump to become the Republican nominee for President in the Primary Election. Prior to running the Indiana Trump Pence campaign, Ms. Jaworowski served as the Communications and Government Affairs Director for Sunrise Coal, LLC / Hallador Energy Company. In 2016 she ran for Indiana State Senate and for nearly 15 years she ran a successful marketing and communications business.



Marco Presutti
Director General of the Electricity Resources Branch, Energy Sector (Canada)

Over the past seventeen years, Marco has held various positions in the federal public service with both Natural Resources Canada and Environment Canada. In his current role as the Director General of Electricity Resources Branch, he manages Canada's interests and responsibilities related to electrical and nuclear energy, as well as uranium and radioactive waste. He is responsible for the formulation of national policies, strategies, legislation and regulation at the federal level, and represents Canada's interests in domestic and international fora. He also oversees a suite of federal programs that fund clean electricity projects across Canada. Marco holds an MA in Public Administration from Carleton University and a BA in Political Science from York University.

Speaker Bios

MONDAY, OCTOBER 1

Morning Session Speakers

Advancing and Sustaining Nuclear Energy- Industry Perspectives



Nathan Myhrvold
(Conference Keynote)
Vice Chairman of
TerraPower and Founder of
Intellectual Ventures (US)

Nathan Myhrvold is vice-chairman of TerraPower, a leading nuclear innovation company, and CEO and cofounder of Intellectual Ventures, a technology invention and commercialization company. Prior to founding Intellectual Ventures, Myhrvold spent 14 years at Microsoft, where he founded Microsoft Research and numerous technology groups and served as chief strategist and chief technology officer. An avid inventor and scientist, Myhrvold has more than 800 U.S. patents and has published peer-reviewed research in paleontology, climate science, planetary science, and other areas.

As a postdoctoral fellow in the department of applied mathematics and theoretical physics at Cambridge University, Myhrvold worked with Professor Stephen Hawking on quantum theories of gravitation. He earned a doctorate in theoretical and mathematical physics and a master's degree in mathematical economics from Princeton University, and he also has a master's degree in geophysics and space physics and a bachelor's degree in mathematics from UCLA.



Zengguang Lei
Chief Engineer, China
National Nuclear
Corporation (China)

Mr. Lei was born in April 1961.

In 1986, he graduated from Tsinghua University, with a Master's Degree in Isotope Separation, and started his career at the Technology Section in Shanxi Uranium Enrichment Company, holding positions including Assistant Engineer, Engineer and Senior Engineer.

In 1997, Mr. Lei became Deputy Chief Engineer of the Company and was appointed as Vice President in 2001.

In 2002, he joined Institute of Physical-Chemical Engineering as its President.

Since 2010, he has been Chief Engineer of CNNC and Vice President of CNS.



Bill Fox
(General Chair Sustaining
Nuclear Energy)
Executive VP for Global
Nuclear Business, SNC-

Lavalin (Canada)

William (Bill) Fox is SNC-Lavalin's Executive Vice-President, Nuclear. He oversees all operations carried out by the Canadian Nuclear business unit, including the design and delivery of CANDU reactors, life extension projects, plant life management programs and tools, and operation and maintenance services (both BOP and NSP) for existing BWR/PWR and CANDU nuclear power stations across Canada and in key international markets. Bill is a seasoned engineer and executive with nearly 40 years of energy and nuclear power industry experience, including design engineering, procurement, construction, and safety culture leadership experience, with the rare background of working directly with utilities, original equipment suppliers, and architect/engineers. Bill began his career with almost 20 years at Duke Energy, leaving as Vice-President, Major Projects & Technologies. He went on to be Senior Vice President and Project Director at Chicago Bridge & Iron (CB&I) managing a large EPC contract. From there, he was President, Technical Services and Nuclear Energy & CEO Generation mPower for BWX Technologies. In addition to the many leadership roles, Bill has a unique experience of working with a nuclear utility, and OEM and A/E. Bill is a member of the American Society of Civil Engineers (ASCE) and of the American Nuclear Society (ANS); he is a Registered Professional Engineer in four US states. He is also a past Board Member of the Nuclear Energy Institute (NEI), Nuclear Fuel Services (a BWXT Company) and several other joint venture companies in the Department of Energy's National Nuclear Security Administration (NNSA), Office of Environmental Management (EM) and Office of Nuclear Energy. He has completed a Bachelor of Science (BS) in Civil Engineering from the University of South Carolina from 1976 to 1978, previously completing his Associate of Science (AS), PreEngineering again from the University of South Carolina from 1974 to 1976.



Sang-Wook Han
Executive Vice President,
Korean Hydro and Nuclear
Power (Korea)

Mr. HAN Sangwook is the Executive Vice President of KHNP (Korea Hydro & Nuclear Power).

Mr. HAN brings more than 30 years of proven performance within the nuclear industry. He received a bachelor's degree in mechanical engineering from Chon-Buk National University, and joined KEPCO (Korea Electric Power Corporation) in 1985. Mr. HAN spent 15 years at Nuclear Power Plant working in plant operations and engineering. Also, he was involved in global business of KHNP from 1996 to 2003.

In 2015, Mr. HAN was appointed Vice President of Plant Strategy Project Office. After this position, he was assigned as Director General, Nuclear Power Plant III, Hanbit Nuclear Power Site in 2017.

Currently, as the Executive Vice President of Technology & Engineering Division, he is responsible for technology policy and plant engineering of KHNP.



Takuya Hattori
Senior Advisor of Japan
Atomic Industrial Forum,
Inc. (JAIF) (Japan)

Takuya Hattori is Senior Advisor of Japan Atomic Industrial Forum, Inc. (JAIF).

Before taking his current position, Mr. Hattori was President of JAIF from 2007 to 2015. He also served as President of JAIF International Cooperation Center (JAIF-ICC) for six years since 2009.

JAIF is the private-sector organization for the Japanese nuclear industry to promote peaceful use of nuclear power.

Prior to joining JAIF, Mr. Hattori served as Executive Vice President of Tokyo Electric Power Co. Inc. (TEPCO). He has 36 years of experience in nuclear power generation at TEPCO.



Dale Atkinson
Chief Operating Officer
and Chief Nuclear
Officer, NuScale Power
(US)

Dale Atkinson, chief operating officer & chief nuclear officer, joined NuScale Power in 2014. In his current position, he is responsible for Operations, Engineering, Projects, Supply Chain Services, Quality Assurance, Human Resources and Regulatory Affairs.

Prior to assuming this position, Atkinson served as vice president of Energy Business & Services, vice president of Employee Development & Corporate Services, vice president of Nuclear Generation & Chief Nuclear Officer, vice president of Technical Services, Engineering manager, Quality manager, and Reactor Engineering/Fuels manager at Energy Northwest.

Before joining Energy Northwest, Atkinson was a supervisor of Nuclear Startup Testing with General Electric for six years. He also provided consulting services on initial power plant testing to several utilities. Atkinson has 39 years' experience in the nuclear power industry including five years of service as an officer serving on nuclear attack submarines in the U.S. Navy.

Atkinson holds a bachelor's degree in nuclear engineering from Oregon State University.

Speaker Bios

MONDAY, OCTOBER 1

Afternoon Session Speakers International Perspectives on Nuclear Communications



Mimi Limbach
(Moderator)
Managing Partner, Potomac Communications (US)

Mimi Limbach is president and managing partner of Potomac Communications Group, which serves clients in the nuclear energy and science, engineering, energy and infrastructure industries. She is particularly known for her work in helping organizations weather serious crises, making nuclear energy accessible to the public and applying risk communication principles to nuclear energy communications.

She is past president of the Pacific Nuclear Council (PNC) and is chair of the Council's Communications Working Group. Mimi received the American Nuclear Society's (ANS) Distinguished Service Award as well as the ANS Presidential Citation for her outstanding contributions in improving communications for the Society and the nuclear energy industry. She currently is chair of the ANS International Committee. She has served on the U.S. Department of Commerce's Civil Nuclear Trade Advisory Committee since 2015.

Mimi had a 25-year career with Westinghouse Electric Corporation, leading corporate communications as the company transformed itself into today's CBS media conglomerate. At Westinghouse, she led the media campaign with policy makers and opinion leaders that helped achieve normal trade relations between the U.S. and China for civilian nuclear power and paved the way for Westinghouse to export its nuclear energy plants to China.

She defused crises on governance, major litigation, oil spills, radioactive emissions and nuclear materials. Earlier in her career, she led strategic and marketing communications and public relations for Westinghouse's \$5 billion global energy business.



Timothy Ferris
Journalist, Author, Producer and Science Advocate

Timothy Ferris is the author of a dozen books – among them *The Science of Liberty* and the bestsellers *The Whole Shebang* and *Coming of Age in the Milky Way*, which have been translated into fifteen languages and were named by *The New York Times* as among the leading books published in the twentieth century. He also edited the anthologies *Best American Science Writing 2001* and *The World Treasury of Physics, Astronomy, and Mathematics*.

A former editor of *Rolling Stone* magazine, Ferris has published over 200 articles and essays in *The New Yorker*, *Time*, *Newsweek*, *Forbes*, *Harper's*, *Scientific American*, *Vanity Fair*, *The Nation*, *The New Republic*, *The New York Review of Books*, and other periodicals.

His three PBS documentary films—"The Creation of the Universe," (1986), "Life Beyond Earth" (1999), and "Seeing in the Dark" (2007)—have been seen by over twenty million viewers.

Ferris produced the *Voyager* phonograph record, an artifact of human civilization containing music and sounds of Earth launched aboard the twin *Voyager* interstellar spacecraft. Now exiting the solar system, the *Voyagers* are the most distant probes ever created by humans.

Called "the best popular science writer in the English language" by *The Christian Science Monitor* and "the best science writer of his generation" by *The Washington Post*, Ferris has received the American Institute of Physics prize and a Guggenheim Fellowship. His works have been nominated for the National Book Award and the Pulitzer Prize.



John Barrett
President and CEO, Canadian Nuclear Association (Canada)

Dr. John Barrett is President and CEO of the Canadian Nuclear Association (CNA). His career in the Canadian public service includes Foreign Affairs, National Defence, and the Privy Council Office. In addition, he was in the International Staff of NATO and Deputy Director of the Canadian Centre for Arms Control & Disarmament.

Before joining the industry association, Dr. Barrett was Canada's Ambassador to the International Atomic Energy Agency, where he chaired the IAEA's Board of Governors; as well as Ambassador and Permanent Representative to the Comprehensive Nuclear Test Ban Treaty Organization and to the United Nations in Vienna. He served as Canada's Ambassador to Austria and to the Slovak Republic.



Laura Hermann
Partner, Potomac Communications (US)

Laura is a writer, trainer and strategist. She focuses on communication challenges that are unique to large-scale, long-term infrastructure projects. Laura works with clients to prepare strategic communication plans that respond to controversial issues while strengthening public acceptance, stakeholder confidence and investor support. After seven years of increasing responsibility at PCG, she became a partner at the firm.

Laura focuses on strategic communications for the firm's energy, engineering and technology clients. She facilitates research that helps clients define their communication objectives and integrates public speaking, broadcast, print and online media opportunities into long-term education campaigns that meet those goals. She taught in the Undergraduate Leadership Program at Northwestern as an adjunct faculty member.

She is active on the membership committee of the American Nuclear Society.



Kirsty Gogan
Co-Founder and Global Director, Energy for Humanity (US)

Kirsty is co-founder and executive director of Energy for Humanity, a UK and Switzerland based non-profit organisation with a global outlook focused on solving climate change and enabling universal access to modern energy services. Energy for Humanity advocates for evidence-based, whole-system, and technology-inclusive solutions in pursuit of the fastest, most cost-effective, and most feasible outcomes for people and nature.

EFH was shortlisted for the Business Green Leaders "Green NGO of the Year" Award in 2016. At COP23, EFH published a new report on European Climate Leadership 2017 and presented a new study on Decarbonizing Cities with Advanced Nuclear. Kirsty is also founding director of CleanTech Catalyst (a climate and energy consultancy now renamed LucidCatalyst), recently commissioned by the UK Energy Technologies Institute to lead the Nuclear Cost Drivers Study in partnership with Lucid Strategy (based in Cambridge, MA). This Study has since been highlighted in the UK Nuclear Sector Deal.

Speaker Bios

MONDAY, OCTOBER 1

Afternoon Session Speakers

Millennial Nuclear Caucus Goes Global



Lenka Kollar
Director for Business Strategy, NuScale Power (US)

Lenka Kollar is the Director of Strategy & External Relations at NuScale Power where she is working to bring NuScale's small modular reactor to market through business development and clean energy outreach. Previously, Ms. Kollar has held positions at the International Atomic Energy Agency, U.S. National Nuclear Security Administration, and Argonne National Laboratory. She also consulted with public and private sector organizations on nuclear energy policy, public communications, and marketing strategy. Ms. Kollar obtained her BS and MS in Nuclear Engineering from Purdue University and MBA from INSEAD. She is currently International Relations and External Communications Chair of the International Youth Nuclear Congress and on the Board of Directors for Generation Atomic.



Grace K. Meikle
Director for International Business Development, Canadian Nuclear Laboratories (Canada)

Grace Meikle is Director for International Business Development at Canadian Nuclear Laboratories (CNL), Canada's lead nuclear research and development laboratory located in Chalk River, Ontario, Canada. In this role, she develops new business between CNL and international entities to provide nuclear technology solutions in the areas of energy, environment, health, and security, with a focus on the Asian market.

Previously, from 2016 until early 2018, she worked as a Liaison for International Nuclear Energy Cooperation for Idaho National Laboratory (INL). While at INL, she was contracted to the U.S. Department of Energy in Washington, DC. There she helped develop strategies to promote U.S. civil nuclear exports and technology, and oversaw U.S. civil nuclear R&D cooperation with other countries.

Prior to working at INL, Grace was a radiation worker and wireline field specialist for Schlumberger oilfield services in the oil sands of northern Alberta, Canada from 2014- 2016.

Grace received her Bachelors of Science in Physics and Chinese from the University of Notre Dame, class of 2014. She has international and technical experience working on nanomaterials at Tsinghua University in Beijing, China in 2013 and the University of Tokyo in Tokyo, Japan in 2012. She also previously worked as a supply chain specialist for RelyOn Solar, an off-grid solar start-up based in Pune, India in 2011.



Ayako Takeuchi
Nuclear Attaché, Embassy of Japan in the United States (Japan)

Ayako Takeuchi is a Nuclear Attaché, a Third Secretary at the Science Section of the Embassy of Japan in the United States since May 2017 and is responsible for U.S.-Japan cooperation in the nuclear field.

Prior to her current role, she served as a researcher at the International Nuclear Cooperation Section at the Ministry of Foreign Affairs in Tokyo from 2015 to 2017, where she managed the IAEA technical cooperation projects for East-Asian developing countries. Before joining the Ministry of Foreign Affairs, she served as a research project coordinator at Japan Atomic Energy Agency (JAEA) at the Oarai Research Center from 2013 to 2015, and as an administrative staff at the Personnel Division at JAEA Tokai Research Center from 2011 to 2013. Through her career at JAEA, she was involved in educating younger generations of both Japanese and non-Japanese outside of the JAEA by managing a number of training courses for young researchers and university students. She was also a member of JAEA's cross-sectional group which provides basic nuclear energy lessons and other related activities for elementary school and junior high school students.



Joon Seok Kang
Operations Training Support Specialist, UAE Barakah Project (South Korea)

Joon Seok Kang is on the APR1400 Licensing Team to support the design certification project to gain approval of construction and operation in the United States by US Nuclear Regulatory Commission which was successfully submitted and got accepted for design certification in April 2015. Mr. Kang also managed overseas consulting contracts with Westinghouse, Exelon, Talisman, and Enercon.



Wei Jiang
Product Manager, Nuclear Advanced Safety Platform I&C, Nuclear Power Institute of China (China)

Mr. Jiang has been Product Manager for NASPIC research and development since 2015, developing products to supply to nuclear power plants in China, including ACP1000, AP1000, M310, CPR100, and ACP100S. Mr. Jiang previously served as Senior Engineer for research in core cooling and monitoring systems (CCMS) from 2012, during which he developed the CCMS system for the ACP1000. He graduated from Northeastern University in the United States with a major in Computer Science and Technology. His hobbies include playing badminton and performing tea ceremony.

Speaker Bios

TUESDAY, OCTOBER 2

Morning Session Speakers

Advancing Nuclear Energy - The Path Forward



**Rita Baranwal
(Advancing Nuclear
Energy General Chair)**

*Director for Gateway for
Accelerated Innovation in Nuclear,
Idaho National Laboratory (US)*

Dr. Rita Baranwal joined Idaho National Laboratory (INL) in August 2016 as the Director for the Gateway for Accelerated Innovation in Nuclear (GAIN) initiative and has 20 years of experience in the nuclear energy industry. She is responsible for providing the nuclear industry and other stakeholders access to the U.S. Department of Energy's (DOE) state-of-the-art research & development (R&D) expertise, capabilities, and infrastructure to achieve faster and cost-effective development, demonstration, and ultimate deployment of innovative nuclear energy technologies.

Prior to joining INL, Dr. Baranwal served as Director of Technology Development and Application at Westinghouse. There, she led the creation and development of game-changing technologies and managed characterization and hot cell laboratories to support Westinghouse, its customers and the nuclear power industry. Her previous positions at Westinghouse included director of Core Engineering and manager of Materials and Fuel Rod Design. Prior to joining Westinghouse, she was a manager in Materials Technology at Bechtel Bettis, Inc. where she led and conducted R&D in advanced nuclear fuel materials for US Naval Reactors.

Dr. Baranwal was adjunct faculty at University of South Carolina's nuclear engineering graduate program from 2010-2012. She received her bachelor's degree from MIT in materials science and engineering and her master's degree and Ph.D. in the same discipline from the University of Michigan. She also completed an executive management program at Duquesne University's Beard Institute in 2009.

Baranwal currently serves as Chair of the Executive Committee of the American Nuclear Society's (ANS) Materials Science and Technology Division (MSTD). Rita sits on Advisory Boards for MIT's Materials Research Laboratory and UC Berkeley's Nuclear Engineering Department. She also serves on the Board of Directors for North Hills Community Outreach.



**David Blee
(Moderator)**

*President,
U.S. Nuclear Industry
Council (US)*

David Blee serves as the president and chief executive officer of the U.S. Nuclear Industry Council, the leading business consortium advocate for nuclear energy and the promotion of the American supply chain globally. The Council represents more than 80 companies comprising the "Who's Who" of nuclear energy across a broad mix of the U.S. supply chain, including key mover utilities, technology innovators, architect engineers and constructors, manufacturers, suppliers, and services companies.

Blee was appointed in 2016 to a third term on the Civil Nuclear Trade Advisory Committee (CINTAC) by the U.S. Secretary of Commerce. He serves as the chairman of the CINTAC's Subcommittee on Advocacy. Blee's public service also includes appointments as a U.S. principal deputy assistant secretary of energy, director of public affairs for the Department of Energy and as a Congressional chief of staff.

Blee's private-sector experience encompasses assignments as group executive vice-president for NAC International, where he directed U.S. and international business development as well as the NAC Worldwide Consulting Group. He is a former senior vice-president for Robinson, Lake, Lerer and Montgomery, a Wall Street-headquartered strategic communications firm.



Sue Ion

*Chairman, UK
Nuclear Innovation
Research Advisory
Board (UK)*

Dame Sue Ion is currently Hon President of the National Skills Academy for Nuclear and is a member of the UK Office of Nuclear Regulation Independent Advisory Panel. She was Chairman of the UK Government's Nuclear Innovation Research Advisory Board which operated from January 2014- March 2016. She represents the UK on a number of international review and oversight committees for the nuclear sector including the Euratom Science and Technology Committee which she chairs, having been reappointed in April 2014 for a second term. She is the only non US member of the US Department of Energy's Nuclear Energy Advisory Committee on which she has served since 2005.

Dame Sue has been Chairman of the Canadian National Nuclear Laboratory Scientific Advisory Board since the beginning of 2016. She was the UK's representative on the IAEA Standing Advisory Group on Nuclear Energy 2000-2007.



Adi Paterson

*CEO, Australian Nuclear
Science and Technology
Organization (Australia)*

Adi was born and educated in South Africa, attaining both a Bachelor of Science in Chemistry and a PhD in Engineering from the University of Cape Town before undertaking a Council for Scientific and Industrial Research (CSIR) post-doctoral research fellowship at the University of Leeds in England. He was to spend more than 15 years with CSIR, starting out as a researcher in engineering ceramics and culminating in his tenure as the organisation's Executive Vice-President, Technology and Chief Information Officer. A joint executive role between CSIR and the University of Pretoria followed.

He spent some time working for the South African government's Department of Science and Technology before taking on the frontier role of General Manager of Business Development and Operations for the Pebble Bed Reactor Company. At the time, the Pebble Bed Reactor project was at the forefront of developing a safer, cleaner nuclear technology that could be adopted in a small-scale and modular fashion, with significant potential for developing countries.

Speaker Bios

TUESDAY, OCTOBER 2

Morning Session Speakers

Advancing Nuclear Energy - The Path Forward Continued



Jon Ball

Executive Vice President, GE Hitachi Nuclear Energy, Nuclear Plant

Projects (US)

Jon Ball is Executive Vice President of Nuclear Plant Projects for GE Hitachi Nuclear Energy, a position he assumed in November 2015. In this role he leads the development and execution of new plant strategies globally.

Jon has been a leader in the nuclear industry for more than 20 years and has a wide-range of experience in manufacturing, global operations, services, quality and P&L leadership.

From 2012-2015 Jon served as Senior Vice President, Global Supply Chain, where he led more than 1,000 employees worldwide in manufacturing and logistics. Prior to that Jon spent seven years in services where he led both the performance services and field services segments.

Before that he spent seven years with Global Nuclear Fuel, a joint venture majority owned by GE, serving in several positions including global supply chain leader, quality manager and lab manager.



Takashi Kiyoura

Director, Atomic Energy Division, MEXT (Japan)

Mr. Kiyoura attended Kyushu University in Japan, where he received a Masters of Engineering in 1993. Currently Mr. Kiyoura is Director of the Atomic Energy Division at MEXT (Ministry of Education, Culture, Sports, Science and Technology). He is responsible for policy of research and development related to nuclear energy, such as Fukushima daiichi nuclear plant decommissioning and nuclear innovation. Previously he also worked as a director at the JST (Japan Science and Technology Agency), which is a funding agency for innovation. Mr. Kiyoura also spent time as a Secretary to the Minister of State for Science and Technology Policy.



Gina Strati

Director for Energy Programs, Canadian Nuclear Laboratories (Canada)

Gina Strati is the Director of the Energy Program at Canadian Nuclear Laboratories (CNL). She is responsible for research and development activities related to supporting the safe operation of existing nuclear power generating stations, understanding nuclear fuels and fuel cycles, deploying advanced reactors including Small Modular Reactors, developing hydrogen technologies, and addressing federal research needs by developing technologies to meet Canada's greenhouse gas emission targets. Gina received her Bachelor of Science in Chemistry from McGill University in Montreal and her Ph.D. in Physical Chemistry from the University of New Orleans in Louisiana.

Morning Session Speakers

Advancing Nuclear Energy – Technology Leadership



Corey McDaniel (Moderator)

Vice President for Business Development, Canadian Nuclear Laboratories (Canada)

Corey McDaniel is the VP for Business Development at the Canadian Nuclear Laboratories.

Previously he managed international and commercial cooperation for the Idaho National Laboratory (INL) Nuclear Science and Technology Directorate. Corey also served as the lead laboratory coordinator for India to the U.S. Department of Energy (DOE), and the lead lab advisor to the DOE office of Nuclear Energy International Cooperation.

Prior to INL he served as VP for Asia in Hong Kong, China for a nuclear electrical supplier and in Mumbai, India as the international director of NuScale Power, a small modular reactor (SMR) company.

Corey secured and managed the delivery of replacement safety class (1E) cables to KHNP's Shin Kori 3 & 4. He also facilitated 1E cable deliveries to China and the UAE, and opened the Japanese market to U.S.-supplied cables for the first time. Corey facilitated MOUs with China's largest nuclear utility and India's largest nuclear EPC during visits to more than a dozen Asian and European countries.

Dr. McDaniel spent 5 years in the U.S. Senate as a legislative director and energy policy advisor to three Senators from Idaho and Arizona.

Corey began his career as a nuclear safety analyst performing PRA and thermal-hydraulic research at the Los Alamos National Laboratory.

He received his doctorate in environmental science and public policy from George Mason University and his bachelors and masters degrees in nuclear engineering from the University of New Mexico and Purdue University respectively.



David Petti

Author of MIT Future of Nuclear Energy Study, Idaho National Laboratory (US)

Dr. David Petti is a graduate of the MIT Nuclear Engineering Department and has been recognized as a Fellow at both the Idaho National Laboratory and the American Nuclear Society. Dave is the author of over 100 peer-reviewed publications and 50 national and international conference proceedings in the areas of fusion safety, TRISO-coated particle fuel behavior, and fission reactor safety. With over 29 years of experience in nuclear fission and fusion technology, he currently serves as Co-National Technical Director in DOE's Advanced Reactor Technologies Program, providing input to the direction and research of nuclear reactors in the future. In his director roles at Idaho National Laboratory, he has had direct experience with research and development for fuels, graphite, high-temperature materials, and design and safety evaluation methods. Dr. Petti is an expert in coated particle fuel technology and represents the U.S. in a variety of international forums related to high temperature gas-cooled reactor technology.

He has also served as the Deputy Director and the US lead for Safety and Standards in the DOE Fusion Technology program. In the US Fusion Safety Program he was responsible for and made seminal contributions to safety and risk evaluations of the ITER design, and technical leadership of safety-related R&D for the International Thermonuclear Experimental Reactor (ITER) project.

Speaker Bios

TUESDAY, OCTOBER 2

Morning Session Speakers

Advancing Nuclear Energy – Technology Leadership Continued



Gordon Bryan
*Deputy Director, U.K.
National Laboratory
(United Kingdom)*

Gordon Bryan is currently the Research and Innovation Director of the Nuclear Innovation and Research Office (NIRO). NIRO operates as a directorate of the National Nuclear Laboratory (NNL) and is separated from the commercial NNL business by a series of ethical barriers. NIRO is charged with providing independent technical advice to underpin Government policy. For the last 5 years he has worked closely with both the Nuclear Innovation and Research Advisory Board (NIRAB) to formulate and interpret advice on the publicly funded civil nuclear research required to underpin Government policy. Prior to his current role Gordon spent almost 35 years in the UK nuclear industry carrying out a range of research, technical strategy and commercial roles spanning the whole of the nuclear fuel cycle.



Han Ok Kang
*Director of SMART
Program, Korean
Atomic Energy Research
Institute (Korea)*

Dr. Kang received his Ph.D. in Nuclear Engineering from the Seoul National University with thesis title: A Theoretical Modeling of Heat Transfer and Evaporation in the Vertical Channel Related to PCCS, and Development of Correlation.

After Dr. Kang joined KAERI as Post Doc. In 1996, he has published more 50 technical papers in the area of small modular nuclear reactor design. His research has focused on reactor system design including passive safety system, once-through steam generator, and plant control logic. Currently he works as project management director of SMART Pre-Project Engineering Project for KSA construction.



Dai Zhimin
*Deputy Director of SINAP
(China)*

Dai Zhimin, male, born in 1969, obtained Ph.D. degree at Shanghai Institute of Applied Physics (SINAP), CAS, in 1995. Since then he has been working at SINAP. Currently He is a deputy director of SINAP, also a guest professor of University of CAS and Shanghai-Tech University. He was one of the CAS Distinguished Research Fellows in 2014. He was awarded the Distinguished Scientific Achievement Award in 2011.

Areas of Research: Nuclear Science and Technology.

Achievement and Experience: Since 1995, he was in charge of the physical design, construction and commissioning of storage ring of Shanghai Synchrotron Radiation Facility (SSRF), which is one of the biggest scientific platform in China. When the SSRF was completed, it was considered as a world leading facility. The SSRF was awarded a grand prize from the Shanghai Science and Technological Progress in 2012 and a first prize from the National Scientific and Technological Progress in 2013. As the deputy director of the “Strategic Priority Research Program” of CAS - “Thorium Molten Salt Reactor (TMSR) nuclear energy system”, he is responsible for the design of TMSR experiment devices, safety analysis, prototype development, experimental platform construction and so on. He participates in the formulation of TMSR technical aims of science and technology, development strategy, road maps and team creation.



Simon Irish
*CEO, Terrestrial
Energy (US)*

Simon Irish is Chief Executive Officer of Terrestrial Energy Inc. He has 20 years of global investment banking and investment management experience in New York and London. He has a formal education in the quantitative sciences and quantitative finance, and has established and managed multi-billion-dollar alternative investment businesses in North America.

Mr. Irish is the former Head of Man Global Strategies (MGS) in North America, the strategic investment division of Man Group Plc, a leading global investment management business. During his tenure at Man, Mr. Irish was responsible for building and managing the largest and most active strategic investment and managed account business in North America. Mr. Irish was a member of the Investment Committee and responsible for corporate acquisition opportunities in North America for Man Group Plc.

Mr. Irish began his banking career at Credit Suisse in London, and in 2001 moved to New York as Director of FRM, the London based investment firm, to establish its U.S. business.

In 2010, he focused on opportunities in breakthrough energy technologies and in particular nuclear energy given its unparalleled energy density and the commercial potential of advanced reactor technologies.

Mr. Irish holds an MA in Natural Sciences from Cambridge University and an MSc in Finance from the London Business School.



Ken Langdon
*Vice President Of
Operations And Plant
Services, Nuscale (US)*

Ken Langdon, vice president of operations and plant services, is responsible for defining the NuScale Power plant's operational and maintenance requirements to ensure it can be operated in a safe and efficient manner.

Langdon is an experienced executive whose career began in 1988 in the U.S. Navy (eight years) as a Nuclear Machinist's Mate. In the nearly three decades since, he has served in a diverse range of leadership roles in U.S. utilities, and also on the power plant supplier side both domestically and internationally.

Langdon joined NuScale from Westinghouse where he held the positions of vice president and deputy project director at V.C. Summer, as well as vice president of operational readiness in Shanghai, China for the first two AP1000 plants in the world.

Prior to working at Westinghouse, Langdon was site vice president at the Nine Mile Point Nuclear Plant for Constellation Energy Nuclear Group; plant manager at the Sequoyah Nuclear Plant for Tennessee Valley Authority; senior director operations, operations service director and outage manager at the Diablo Canyon Power Plant; work management director and nuclear oversight manager at the Peach Bottom Atomic Power Station and maintenance services manager at the Dresden Station for Exelon Nuclear.

Langdon holds a bachelor's degree in workforce education & development from Southern Illinois University and a SRO Certification from LaSalle County Nuclear Station.

Speaker Bios

WEDNESDAY, OCTOBER 3

Morning Session Speakers Sustaining Nuclear Energy-Utility Perspective



Chuck Kharrl
Vice President of Site Operations, Arizona Public Service (US)

Chuck Kharrl is vice president, site operations for Arizona Public Service Company (APS). Based in Phoenix, APS is Arizona's largest electric company and serves nearly 1.2 million customers across the state.

Kharrl is responsible for the operation of the company's three nuclear units at Palo Verde Nuclear Generating Station – the nation's largest power producer. Roles reporting to Kharrl include four Assistant Plant Managers, the Directors of Operations, Maintenance, Maintenance Projects, Work Management, Chemistry and Radiation Protection.

Kharrl has developed broad experience in a variety of leadership positions since joining APS in 2007. Before assuming his current role, he was the director of work management, Palo Verde Nuclear Generating Station. He led the strategic improvement efforts in refuel outage execution for the three unit nuclear facility. Palo Verde Nuclear Generating Station reduced outage duration by 50% (from 60 days to less than 30 days), while improving on safety and quality standards. Kharrl developed multi-discipline vertical and horizontal alignment within the organization and thus achieved operational excellence.

Kharrl is a graduate of Naval Nuclear Power School and earned his Master of Business Administration degree from the University of Arizona.



Yunho Kim
Director General, Korea Hydro & Nuclear Power Co (Korea)

Yunho Kim is the Director General at KHNP Central Research Institute having more than 30 years of experience in nuclear industry. He is in charge of new reactor development projects in Korea. He is also currently project manager of APR1400 design certification for US NRC. He has worked the design certification project since 2010 including pre-application review meetings with NRC.

Before the current position, Mr. Kim had broad experience in KHNP. He started his career as core designer and developed optimized operational strategy for power ascending and the efficient ex-core detector calibration method for 10 years based on neutron kinetic background. And following 10 years, he involved in the management of the safety analysis, environmental qualification and refurbishment of Wolsong unit 1 in Korea.



Chris Comfort
Innovation and Technology Manager, Southern Nuclear (United States)

Chris Comfort is the Innovation and Technology Manager for Southern Company's Nuclear Division – Southern Nuclear. In this role Chris' organization is leading evaluation of new technology, developing innovative solutions for improvements in nuclear power and building a culture of innovation. Chris is a nuclear engineer that has recently started working with agile development, lean startup, and human centered design thinking to expedite technology reviews and work with cross functions teams at evaluating solutions.



Frank Saunders
President, Ontario Nuclear Innovation Institute (ONII), Vice President, Regulatory Affairs, Bruce Power (Canada)

Frank began his career in the nuclear industry with Ontario Hydro where he held management positions in a number of disciplines including engineering, operations, quality assurance, safety and inspection. Frank considers his time as a licensed control room shift supervisor and his last four years organizing and carrying out plant safety evaluations as the highlights of his time with Ontario Hydro. These independent oversight inspections included North American and international plants and a two year assignment with the Institute of Nuclear Power Operations (INPO).

After 13 years with Ontario Hydro Nuclear, Frank moved to McMaster University as Manager, McMaster Nuclear Reactor. Subsequently, he took up the position of Director of Nuclear Operations and Facilities where, as senior nuclear operating authority, he oversaw operations at McMaster's Nuclear Reactor, Accelerator Facility, Nuclear Research Building Laboratories and support facilities.

In 2001, Frank returned to the Bruce site with the launch of Bruce Power as Vice President Safety and Environment. Since 2001, he has held senior positions in a variety of areas including safety, environment, security, emergency response, regulatory relations and oversight. Frank is particularly proud of Bruce Power's strong reputation in these areas and the opportunity he had to play a role in this.

Prior to his more than 35 years in the nuclear industry, Frank served 12 years in the Canadian Armed Forces as a Land Ordnance Engineer.

Currently, Frank holds the position of President, Ontario Nuclear Innovation Institute (ONII) and Vice President of Regulatory Affairs with Bruce Power.



Norio Atsumi
Director for Nuclear Energy, Federation of Electric Power Companies (Japan)

Mr. Atsumi received a Master's Degree of Engineering at Keio University in 1989. Currently he is the Director for Nuclear Energy at the Federation of Electric Power Companies (Japan), after previously being a General Manager. Mr. Atsumi also spent time as the Deputy General Manager at Nuclear Fuel Cycle, and was a Plant Manager at Kashiwazaki Kariwa Nuclear Power Station.

Speaker Bios

WEDNESDAY, OCTOBER 3

Morning Session Speakers Sustaining Nuclear Energy – Science & Technology Perspective



Gary Wolski
(Moderator)
Past U.S. Civil Nuclear Trade Advisory Committee Chair and VP-Market Development for Curtiss-Wright's Nuclear Division

Gary Wolski's nuclear career started over thirty years ago where he served in the U.S. Navy's nuclear power program on board a ballistic missile submarine. Mr. Wolski then worked in Reactor Operations at the Fast Flux Test Facility and as a Maintenance Engineer at Tank Farms and the Effluent Treatment Facility for Westinghouse Hanford Company at the Department of Energy's Hanford Reservation. For the last twenty-two years, Mr. Wolski has been with Curtiss-Wright, working in their Nuclear Division in positions of increasing levels of responsibility in Sales, Marketing, Business Development and Management. His current position is Vice President of Market Development where he is responsible for growing Curtiss-Wright's civil nuclear power business outside of North America.

Mr. Wolski was reappointed to CINTAC, the Civil Nuclear Trade Advisory Committee that advises the Secretary of Commerce on ways to increase civil nuclear exports, and was elected Chairman. He served as Vice Chairman of the previous CINTAC charter, chairman of CINTAC's Supplier Capacity and Competitiveness subcommittee on his first charter, chairman of NEI's Trade Issues Subcommittee, chairman of Curtiss-Wright's Employee Political Action Committee, and is a member of NEI's Supplier Advisory Committee.



Hirokazu Ofuji
Senior Director, Marubeni Utility Services (Japan)

Hirokazu Ofuji is the Senior Director at Marubeni Utility Services. Mr. Ofuji received his bachelor's degree in economics at Kindai University.

He has ten years experience in nuclear industry, three years experience in Plant Process Computer replacement for Fukushima Daiichi Nuclear Power Plant, as a project manager and five years experience in Nuclear IT security field, and three years experience in Fire protection for NRA (Nuclear Regulation Authority) regulation.



Sherry L. Bernhoft
Director for Long Term Operations, Electrical Power Research Institute (US)

Sherry Bernhoft is the Senior Program Manager for Strategic Programs and Long-Term Operations at the Electric Power Research Institute (EPRI). In this position she is responsible for planning and managing a portfolio of research projects that provide the technical basis for flexible nuclear plant operations, and plant life extension. This portfolio of research projects is collaborated with the DOE Light Water Reactor Sustainability (LWRS) projects and EPRI's international partners.

Bernhoft joined EPRI in 2012 as a Program Manager. Prior to joining EPRI, she worked at a number of nuclear power plants in the U.S., most recently the Comanche Peak Nuclear Power Plant where she was Manager, Project Engineering. She was responsible for the design, project controls and installation of several large capital projects.

Prior to working for Luminant, Bernhoft worked for Mitsubishi as the Senior Project Manager for the proposed Comanche Peak units 3 and 4 new build projects and lead an international team responsible for preparation of the reference COLA for the MHI US APWR design plant. She also worked for NMC as Fleet Director of Project, Management, and Progress Energy's Crystal River Plant as Systems Engineering Manager and Licensing Manager.

Bernhoft holds a chemical engineering degree from Lafayette College, a master's in business administration from Webster University, an SRO Certification at Crystal River-3, and a STA Certification at the Kewaunee Nuclear Power Plant.



Fred Dermarkar
President, CANDU Owners Group (Canada)

Fred Dermarkar is the President and CEO of the CANDU Owners Group (COG), a not-for-profit organization dedicated to helping operators of CANDU and Pressurized Heavy Water Reactors worldwide to achieve excellence through collaboration in research and development, joint projects and information exchange. He has worked in the Canadian nuclear industry since 1981, and, prior to his role at COG, he held a variety of technical and progressively more senior positions at Ontario Power Generation (OPG) in support of Design, Commissioning, Operation and Refurbishment of its CANDU NPPs. He retired from OPG as the Vice President of Engineering Strategy in February 2014 to assume his current role. In October 2013, Fred was named a recipient of the WANO Nuclear Excellence Award. He graduated from the University of Toronto with a degree in Mechanical Engineering.



Bruce Hallbert
U.S. Light Water Sustainability Program Director, Idaho National Laboratory (US)

Bruce Hallbert is the Director of the Technical Integration Office of the US Department of Energy's Light Water Reactor Sustainability Program. He previously served as the national technical director of Advanced Sensors and Instrumentation research for the DOE-sponsored Nuclear Energy Enabling Technologies (NEET) program and In-Pile Sensors Initiative. He is the past President of the International Association of Probabilistic Safety Assessment and Management (IAPSAM) and now serves as its Secretary. He received his Ph.D. in Civil and Environmental Engineering from Vanderbilt University in Nashville, Tennessee.



Danrong Song
Director for Research, Nuclear Power Institute of China (China)

Danrong Song graduated and obtained his Doctoral degree of Engineering in Nuclear Science and Engineering Small and medium size reactor overall design. He has experience with Isotopic production reactor overall design, Seawater desalination, low temperature nuclear heating plant feasibility study, Mechanical-electrical equipment for power plant design, Manufacturing surveillance, Components procurement, Installation & testing, In-factory acceptance, Shipping & transportation, and On-site acceptance.



Ron Oberth
President, Organization of Canadian Nuclear Industries (US)

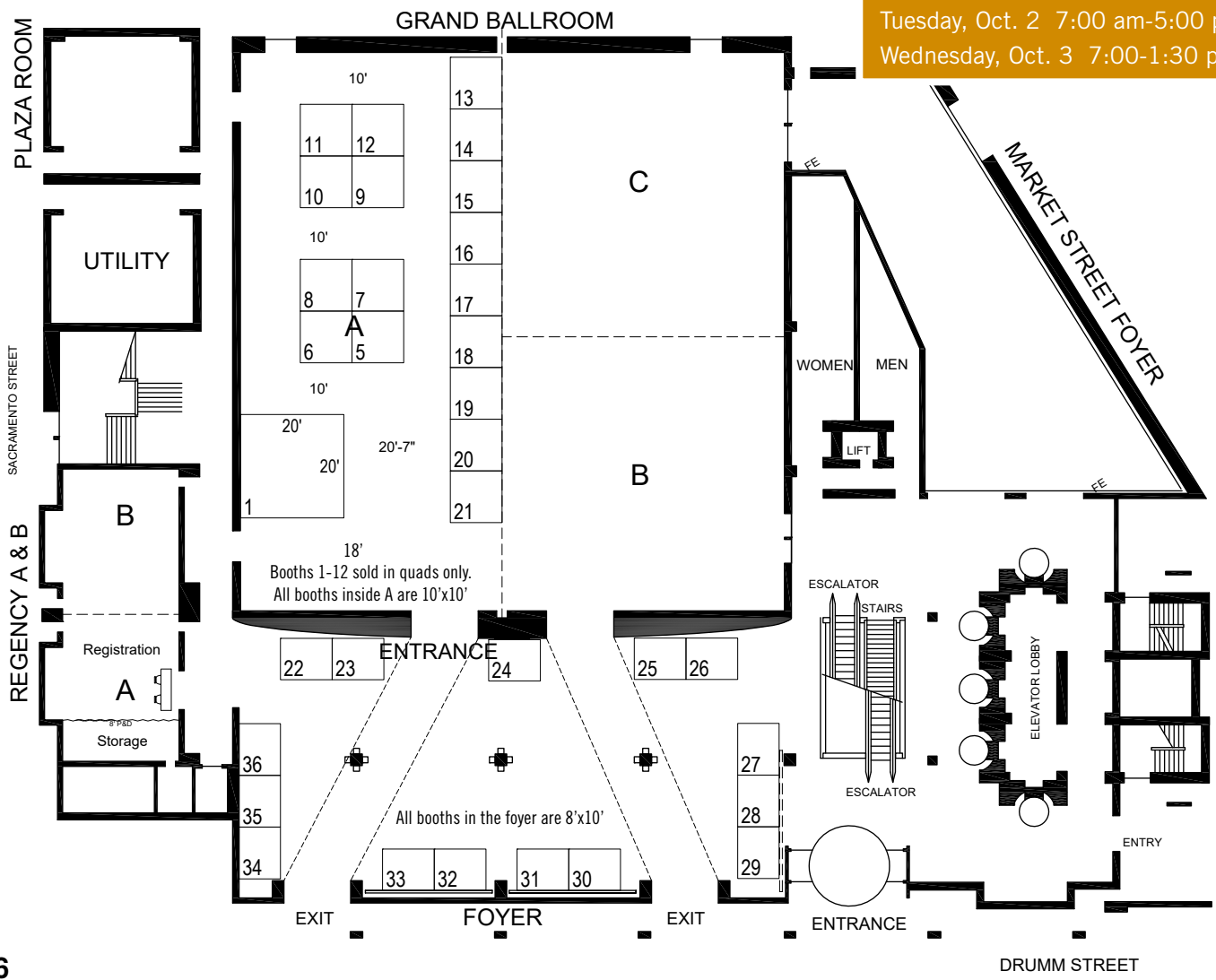
Dr. Ron Oberth has worked in the Canadian nuclear industry for more than 30 years at Ontario Hydro, Ontario Hydro International, Ontario Power Generation and the former AECL Reactor Division (now SNC-Lavalin/ Candu Energy). In June of 2011 Ron became president and CEO of the Organization of Canadian Nuclear Industries (OCNI) – an industry association that represents 180 private sector companies that supply equipment and services to CANDU and other nuclear power plants in Canada and offshore. His nuclear experience includes reactor safety, used fuel management, medical isotopes, and the marketing of CANDU reactors both domestically and internationally. Ron is a graduate of the University of Manitoba and the Rotman School of Business and received his PhD in aerospace propulsion from Princeton University.

Exhibitors List

Advanced Measurement & Analysis Group Inc. (AMAG Inc.)	Booth 34	Organization of Canadian Nuclear Industries	Booth 32 & 33
Argonne National Laboratory	Booth 29	COG	
Canadian Nuclear Laboratories	Booth 25 & 26	L3 MAPPS	
Curtiss-Wright Nuclear	Booth 5	Laker Energy Products	
EK USA	Booth 23	MZConsulting	
F&J Specialty Products Inc.	Booth 20	PCL	
Gateway for Accelerated Innovation in Nuclear (GAIN)	Booth 17	Terrestrial Energy	
Idaho National Laboratory	Booth 27	Pacific Northwest National Laboratory	Booth 30
INL Light Water Reactor Sustainability Program	Booth 28	SNC-Lavalin	Booth 35 & 36
Kairos Power LLC	Booth 16	TEAM KOREA, KHNP	Booth 1, 2, 3 & 4
L3 MAPPS	Booth 21	KAIF (Korea Atomic Industrial Forum)	
Nuclear Science User Facilities (NSUF)	Booth 18	KEPCO KPS	
NuScale Power	Booth 31	KEPCO Engineering & Construction Company. (KEPCO E&C)	
NuTherm International, Inc.	Booth 7	KEPCO Nuclear Fuel Company (KEPCO NF)	
		Doosan Heavy Industries & Construction	
		Thinklogical, A Belden Brand	Booth 6
		US Nuclear Industry Council	Booth 24
		Westinghouse Electric Company	Booth 22

Exhibit Hall

Hours:
 Sunday, Sept. 30 5:00-7:00 pm
 Monday, Oct. 1 7:00 am-5:00 pm
 Tuesday, Oct. 2 7:00 am-5:00 pm
 Wednesday, Oct. 3 7:00-1:30 pm



Exhibitor & Expo Info

Advanced Measurement & Analysis Group Inc. (AMAG Inc.)

Mississauga, ON Canada (Booth 34)

Advanced Measurement and Analysis Group Inc. (AMAG) provides products and services in the nuclear industry, mostly non-intrusive ultrasonic cross-correlation flow measurement. The major applications of AMAG's flow meter CROSSFLOW, are power uprate and power recovery on feedwater pipes, and coolant flow measurement on feeder pipes, improving efficiency and safety margin.

Argonne National Laboratory

Lemont, IL (Booth 29)

Argonne National Laboratory conducts leading-edge basic and applied research in virtually every scientific discipline. Argonne researchers work closely with scientists and engineers from hundreds of companies, universities, and federal, state and municipal government agencies to help solve specific problems and address the United States' challenges in sustainable energy, a clean environment and national security.

Canadian Nuclear Laboratories

Ontario, Canada (Booth 25 & 26)

Canadian Nuclear Laboratories (CNL) is Canada's premier nuclear science and technology laboratory, dedicated to developing peaceful and innovative applications from nuclear technology through its expertise in physics, metallurgy, chemistry, biology, and engineering. We address global issues across the nuclear lifecycle – reactors and fuels, waste management, nuclear safeguards – and develop novel medical isotopes and devices.

Curtiss-Wright Nuclear

Brea, CA (Booth 5)

Curtiss-Wright Nuclear provides a comprehensive range of products and services that sustain the safe, reliable, and cost-effective operation of nuclear power plants worldwide. We offer proactive solutions to critical plant obsolescence issues, and we provide innovative technologies in support of Plant Life Extension and Delivering the Nuclear Promise.

EK USA

Logan, UT (Booth 23)

EK USA is a USA manufacturer and premier supplier of FME solutions which include, ID lanyards, Credential holders, RFID shielded ID holders, Dosimeter leashes, tool leashes and multi device holders. New for 2018 is our anti-fog safety eyewear kits with our #1 rated anti-fog and goggle insert for safety eyewear and safety eyewear retainer.

F&J Specialty Products Inc.

Ocala, FL (Booth 20)

F&J manufactures traditional and microprocessor controlled air sampling systems, airflow calibrators, tritium collection systems and lightweight battery powered emergency response air samplers. F&J also manufactures advanced technology systems for nuclear power plant RETS-REMP compliance monitoring programs.

F&J is the world's largest manufacturer of radioiodine collection cartridges, such as TEDA impregnated charcoal and silver zeolite cartridges

Gateway for Accelerated Innovation in Nuclear (GAIN)

Idaho Falls, ID (Booth 17)

GAIN's mission is to provide the nuclear energy industry with access to the technical, regulatory, and financial support necessary to move new or advanced nuclear technologies toward commercialization in an accelerated and cost-effective fashion. Through private-public partnerships, GAIN connects nuclear innovators to DOE national laboratory capabilities and RD&D programs.

Idaho National Laboratory

Idaho Falls, ID (Booth 27)

Idaho National Laboratory (INL) is the nation's lead laboratory for nuclear energy research, development, and demonstration. INL's Nuclear Science & Technology researchers work with unparalleled irradiation and post-irradiation examination, fuel fabrication and materials testing facilities to develop better fuels and materials for the current fleet and for advanced nuclear reactor designs.

INL Light Water Reactor Sustainability Program

Idaho Falls, ID (Booth 28)

The Light Water Reactor Sustainability (LWRS) Program is an R&D program sponsored by DOE with participation by NRC and the nuclear industry. The LWRS Program leverages the extensive capabilities of DOE's national labs to provide the technical foundation for licensing and managing the long-term safe operation of existing nuclear power plants.

Kairos Power LLC

Oakland, CA (Booth 16)

Kairos Power is a nuclear energy technology and engineering company based in California, whose mission is to enable the world's transition to clean energy. Kairos is engaged in reactor design, licensing, and technology development efforts to commercialize the fluoride salt-cooled high temperature reactor (FHR). The FHR has unique potential to be deployed with robust safety and affordable costs to enable large scale electricity generation that is competitive, reliable, and responsible.

Exhibitor & Expo Info

L3 MAPPS

Quebec, Canada

(Booth 21)

Count on L3 MAPPS for easy-to-use fundamentals/systems learning technologies and for effective simulator solutions that best suit your training or engineering needs. We offer plant component learning modules to touchscreen classroom trainers to plant-specific operator training simulators—all designed and aimed at unlocking value for your organization.

Nuclear Science User Facilities (NSUF)

Idaho Falls, ID

(Booth 18)

The Nuclear Science User Facilities (NSUF) offers unparalleled research opportunities for nuclear energy researchers via 21 partner institutions. Users are provided access (at no cost to the researcher) to world-class nuclear research facilities, technical expertise from experienced scientists and engineers, and assistance with experiment design, assembly, safety analysis and examination. Access is awarded through a competitive peer-reviewed process, and NSUF research supports Department of Energy-Office of Nuclear Energy missions.

NuScale Power

Portland, OR

(Booth 31)

NuScale Power is developing a new modular light water reactor nuclear power plant to supply energy for district heating, desalination, and process heat applications. This groundbreaking small modular reactor (SMR) design features a fully factory fabricated NuScale Power Module(tm) capable of generating 60 MW of electricity using a safer, smaller, and scalable version of pressurized water reactor technology.

Nutherm International, Inc.

Mt. Vernon, IL

(Booth 7)

Nutherm is an innovative company committed to delivering world class solutions to the commercial nuclear power industry and the Department of Energy that meet the demands of the 21st century while providing unprecedented levels of service. We utilize our technical expertise to exceed customer's expectations. We will provide risk management solutions that create financial returns for our customers and manufacturing partners.

Organization of Canadian Nuclear Industries

Ontario, Canada

(Booths 32 & 33)

The Organization of Canadian Nuclear Industries (OCNI), is the leading and trusted voice of the Canadian nuclear supply chain actively promoting the production of safe, clean and reliable nuclear electricity. Founded in 1979, OCNI is an association of more than 240 leading Canadian suppliers to the nuclear industry in Canada and abroad.

Organization of Canadian Nuclear Industries Continued

Ontario, Canada

(Booths 32 & 33)

COG

The CANDU Owners Group (COG) is a private, not-for-profit corporation funded voluntarily by all CANDU operating utilities worldwide and Canadian Nuclear Laboratories, with strong supplier participation. COG helps its members to collaborate in the sharing of OPEX and best practices, training, and R&D and other joint projects.

L3 MAPPS

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Laker Energy Products

Laker Energy Products is a leading supplier of precision-machined nuclear components, nuclear grade material and commercial grade dedication (CGD) services. We are a fully integrated manufacturer and testing facility for fuel channel, feeder, fuel handling and reactivity control components. 100% of our business comes from the Nuclear industry.

MZConsulting

At MZConsulting, our mission is to advance the global nuclear industry by providing advice to governments and utilities both on the broad strategic development of nuclear programs and more specifically on how to increase confidence and reduce risk for nuclear projects. Our focus is on driving nuclear programs and projects to success.

PCL

PCL works across the United States, Canada, the Caribbean, and in Australia. These diverse operations in the infrastructure, heavy industrial, and buildings are supported by a presence in 31 major centers. With annual construction revenues of more than \$8 billion, PCL is one of the largest contractors in North America.

Terrestrial Energy

Terrestrial Energy is a vendor of advanced power plants, based on its proprietary Integral Molten Salt Reactor. This technology represents innovation in cost, safety and functionality. It will provide clean and cost-competitive heat and electric power for industry. IMSR® deployment can rapidly decarbonize energy production. Based on proven technology, IMSR® can be brought to market in the 2020s.

Pacific Northwest National Laboratory

Richland, WA

(Booth 30)

Pacific Northwest National Laboratory's research missions in scientific discovery, energy resiliency, and national security include a long heritage of supporting our nation's nuclear energy programs. Founded in 1965 in Richland, Wash., PNNL is operated by Battelle for the U.S. Department of Energy's Office of Science. nuclearenergy.pnnl.gov

Exhibitor & Expo Info

SNC-Lavalin

Mississauga, ON, Canada (Booths 35 & 36)

SNC-Lavalin is your trusted long-term partner for nuclear. Our long history and global track record sets us apart for your new build, mid-life refurbishment, operations & maintenance, end of life decommissioning and waste management – no matter your choice of nuclear technology. Trust us to develop and use the latest technology and tools, innovate and develop industry best practices to manage technically complex challenges with precision.

TEAM KOREA, KHNP

South Korea (Booths 1, 2, 3, 4)

KAIF (Korea Atomic Industrial Forum)

KAIF performs various tasks including building network between both domestic and international organizations and reinforcing its function as educational institution for nuclear professionals.

Korea Hydro & Nuclear Power Co.

Korea Hydro & Nuclear Power Co, Ltd. (KHNP) is the total energy solution company in KOREA. The APR1400, which is independently developed by KHNP, was proven safety and excellence by US NRC and EUR Organization. KHNP pursues the highest safety and the most reliable design through proven and advanced technologies.

KEPCO KPS

KEPCO KPS is a public enterprise providing total solutions for the diagnosis and improvement of power plant facilities, O&M for power generation facilities in Korea and overseas, and EPC for new renewable energy, industrial facilities, and transmission and substation facilities.

KEPCO Engineering & Construction Company. (KEPCO E&C)

Since the establishment in 1975, KEPCO E&C is a world-class company having the A/E and NSSS Design technology, and developed Korean standard nuclear power plant OPR1000 and APR1400. The power plants designed by the engineers of KEPCO E&C has been the foundation of energy independence and economic development of Korea, and we will now contribute to creating energy that will bring happiness to all mankind. Engineering for Humans KEPCO E&C.

KEPCO Nuclear Fuel Company (KEPCO NF)

KEPCO NF[KEPCO Nuclear Fuel] is a group company of KEPCO [Korea Electric Power Corporation] founded in 1982. As a representative public atomic energy company, KEPCO NF performs high-level reactor core design, nuclear fuel fabrication, safety analysis and related services.

Doosan Heavy Industries & Construction

Doosan provides “total solution” for NSSS and T/G area ranging from design to forging, manufacturing, testing, installation and services. Doosan had supplied 32 RVs, 114 SGs, and RCP and Nuclear I&C system to Korea/Global NPPs. Also Doosan performs I&C modernization and field service, such as digital Rod Control System.

Thinklogical, A Belden Brand

Milford, CT (Booth 6)

Thinklogical manufactures high-performance video distribution and KVM (keyboard, video and mouse) extension and switching solutions supporting AV and IT requirements for control rooms, operation centers, training, simulation and visualization applications. Thinklogical's highly-secure signal management products help address NERC-CIP cyber requirements, resulting in better data security, reduced costs and increased productivity.

US Nuclear Industry Council

Washington, DC (Booth 24)

The United States Nuclear Industry Council (USNIC) is the leading U.S. business consortium advocate for nuclear energy and promotion of the American supply chain globally. Composed of over 80 companies USNIC represents the “Who's Who” of the nuclear supply chain community, including key utility movers, technology developers, construction engineers, manufacturers and service providers. For more information visit www.usnic.org.

Westinghouse Electric Company

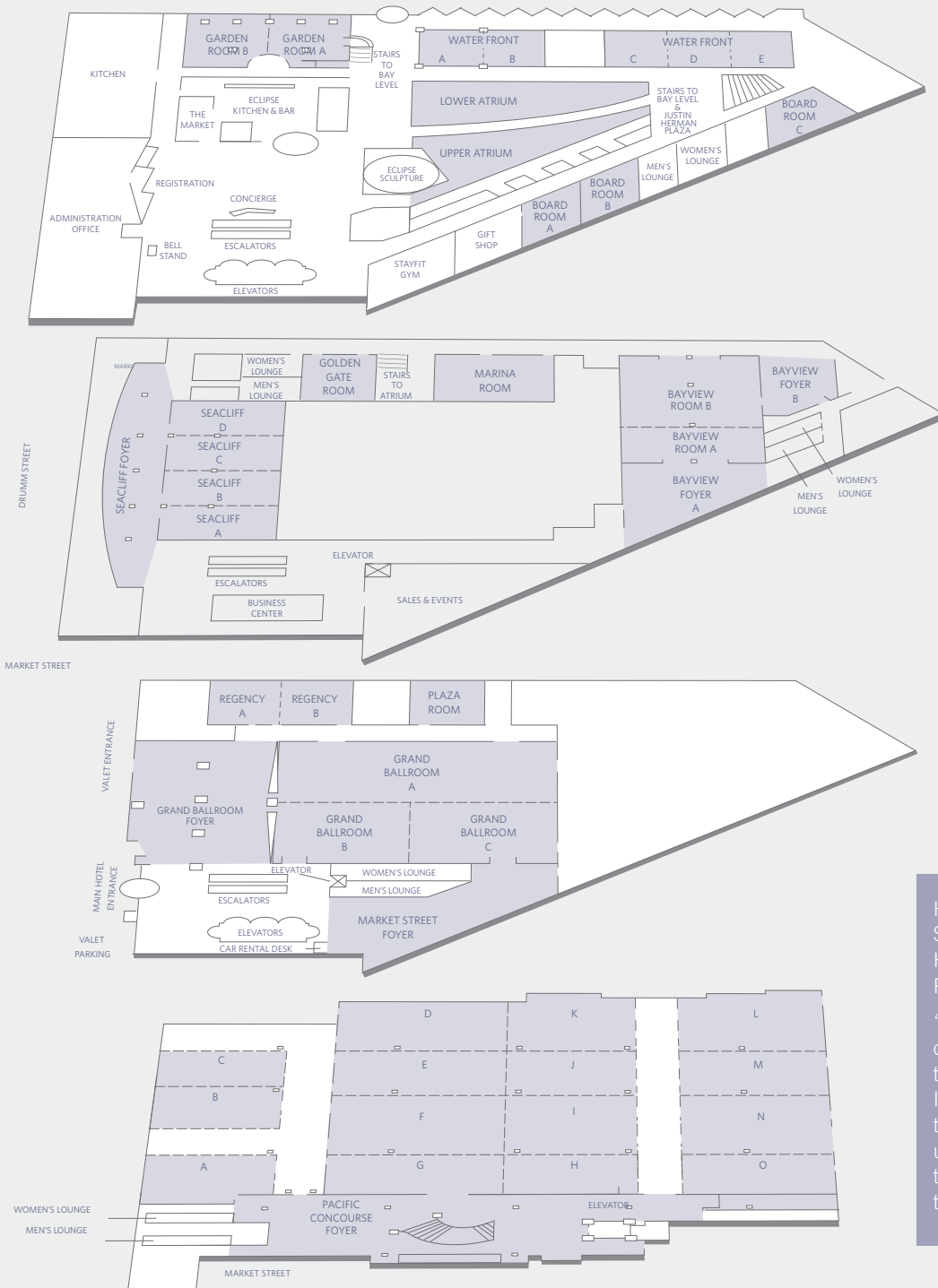
Cranberry Township, PA (Booth 22)

When the era of nuclear energy began more than 50 years ago, we were there. Today, we're leading the way with a new generation of nuclear technology, helping the world meet growing electricity demand with safe, clean, and reliable nuclear energy. No other company is more focused on helping utilities around the world improve their plant technology, reduce outage times, reduce maintenance costs, and have access to the highest quality nuclear fuel.

HYATT REGENCY SAN FRANCISCO
 5 Embarcadero Center
 San Francisco, California 94111, USA
 T +1 415 788 1234
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ANS Meetings



2018 ANS WINTER MEETING AND NUCLEAR TECHNOLOGY EXPO

NOV 11-15, 2018 | Orlando, FL | Hilton Orlando Bonnet Creek

EMBEDDED TOPICAL: 23RD TOPICAL MEETING ON THE TECHNOLOGY OF FUSION ENERGY (TOFE)

EMBEDDED TOPICAL: INTERNATIONAL TOPICAL MEETING ON ADVANCES IN THERMAL HYDRAULICS

CONTE 2019: CONFERENCE ON NUCLEAR TRAINING AND EDUCATION: A BIENNIAL INTERNATIONAL FORUM

FEB 5-7, 2019 | St. Augustine, FL | World Golf Village Renaissance St. Augustine Resort

11TH NUCLEAR PLANT INSTRUMENTATION, CONTROL AND HUMAN-MACHINE INTERFACE TECHNOLOGIES (NPIC&HMIT) 2019

FEB 9-14, 2019 | Orlando, FL

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