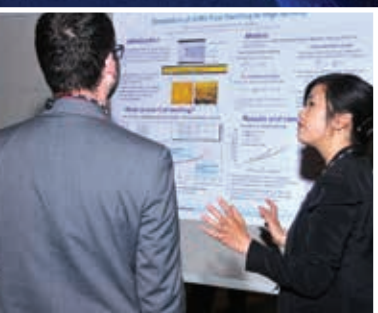
OFFICIAL PROGRAM

ANS Annual Meeting

Nuclear Technology: An Essential Part of the Solution



June 7-11, 2015
Grand Hyatt San Antonio
San Antonio, TX

ANS 2015 Annual Meeting

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General Meeting Information

Plenary and Special Events and Sessions

2015 ANS Annual Meeting Technical Sessions

Additional

2015 ANS Annual Meeting

"Nuclear Technology: An Essential Part of the Solution"

General Chair:
Dale Klein
Univ of Texas at Austin

Assistant General Chair:
Steven R. Biegalski
Univ of Texas

Technical Program Chair:
Jeffery R. Brault
ANL

Assistant Program Chair:
Peter F. Caracappa
Rensselaer Polytechnic Institute

Assistant Program Chair:
Piyush Sabharwall
INL

Finance Chair
Ted Quinn
Consultant

Student Program Co-Chair:
Maggie Flicker
Univ of Texas at Austin

Student Program Co-Chair:
Lane Carasik
Texas A&M Univ

Technical Tours Co-Chair:
Les Shephard
Univ of Texas San Antonio

Technical Tours Co-Chair:
Martha Wright
Univ of Texas San Antonio

Media Chair
Paul Flaningan
CPS Energy

SATURDAY, JUNE 6

2:00-5:00 p.m.	Meeting Registration Hours

SUNDAY, JUNE 7

7:00 a.m.-7:00 p.m.	Meeting Registration Hours
1:00-1:30 p.m.	First-Time Attendee Orientation
5:00-6:00 p.m.	Student Program Q & A Meeting
6:00-8:30 p.m.	ANS President's Reception

MONDAY, JUNE 8

7:00 a.m.-7:00 p.m.	Meeting Registration Hours
7:00-8:00 a.m.	Continental Breakfast *(Sponsored by Duke Energy Corporation)*
8:00-10:00 a.m.	Spouse/Guest Hospitality
8:00-11:30 a.m.	Opening Plenary Session: *Nuclear Technology: An Essential Part of the Solution*
10:00-10:25 a.m.	Morning Break
12:00-1:00 p.m.	Attendee Lunch
1:00-4:00 p.m.	Technical Sessions
3:00-3:25 p.m.	Afternoon Break *(Sponsored by Exelon)*
4:00-6:00 p.m.	ANS President's Special Session: *Radiation Conversations: Informing Consumers and Policy Makers*

TUESDAY, JUNE 9

7:00 a.m.-5:00 p.m.	Meeting Registration Hours
7:00-8:00 a.m.	Continental Breakfast *(Sponsored by NuScale Power)*
8:00-10:00 a.m.	Spouse/Guest Hospitality
8:30-11:30 a.m.	Technical Sessions
10:00-10:25 a.m.	Morning Break *(Sponsored by Northrop Grumman)*
11:30 a.m.-1:00 p.m.	OPD Honors and Awards Luncheon *(Off-site)*
12:00-1:00 p.m.	Attendee Lunch
1:00-6:00 p.m.	Technical Sessions
3:00-3:25 p.m.	Afternoon Break *(Sponsored by Northrop Grumman)*
4:00-6:00 p.m.	General Chair's Special Session: *New Reactor Concepts and Licensing*

WEDNESDAY, JUNE 10

7:00 a.m.-5:00 p.m.	Meeting Registration Hours
7:00-8:00 a.m.	Continental Breakfast *(Sponsored by URENCO USA)*
8:00-10:00 a.m.	Spouse/Guest Hospitality
8:30-11:30 a.m.	Technical Sessions
10:00-10:25 a.m.	Morning Break
12:00-1:00 p.m.	Attendee Lunch
1:00-4:00 p.m.	Technical Sessions
4:00-6:00 p.m.	Focus on Communications Workshop
5:45-6:45 p.m.	ANS Annual Business Meeting

THURSDAY, JUNE 11

7:00 a.m.-2:00 p.m.	Meeting Registration Hours
7:00-8:00 a.m.	Continental Breakfast *(Sponsored by General Atomics)*
8:30 a.m.-12:00 p.m.	Technical Tour: SAWS Dos Rios Waste Water Treatment Facility and San Antonio River Authority (SARA)
8:30-11:30 a.m.	Technical Sessions

Daily Schedule

Saturday & Sunday, June 6-7		Location
2:00-5:00 p.m.	**Registration (Saturday)**	Lone Star Foyer
7:00 a.m.-7:00 p.m.	**Registration (Sunday)**	Lone Star Foyer
1:00-1:30 p.m.	**First-Time Attendee Orientation**	Crockett A/B
5:00-6:00 p.m.	**Student Program Q&A**	Travis D
6:00-8:30 p.m.	**ANS President's Reception**	Texas Ballroom D/E

Monday, June 8		Location
7:00 a.m.-7:00 p.m.	**Registration**	Lone Star Foyer
7:00-8:00 a.m.	**Continental Breakfast** *(Sponsored by Duke Energy Corporation)*	
8:00-10:00 a.m.	**Spouse/Guest Hospitality**	Hospitality Suite
8:00-11:30 a.m.	**Opening Plenary:** Nuclear Technology: An Essential Part of the Solution	Texas Ballroom A/B/C
12:00-1:00 p.m.	**Attendee Lunch**	Lone Star Foyer
1:00-4:00 p.m.	**Technical Sessions**	
	• International Status of Used Fuel and HLW Management: A Review of the 2015 International High-Level Radioactive Waste Management Conference–Panel	Lone Star A
	• Thermal Hydraulics: General—I	Lone Star C
	• Current Issues in Computational Methods–Roundtable	Lone Star D
	• Focus on Communications: Endorsing Nuclear Energy–Panel	Lone Star E
	• Focus on Communications: Improving our Advocacy–Panel	Lone Star E
	• Accident Tolerant Fuel	Lone Star F
	• Computational Tools for Radiation Protection and Shielding	Presidio A
	• Robotics and Remote Systems Topics	Presidio B
	• Nuclear Safety R&D at the Department of Energy	Presidio C
	• Advanced Monte Carlo Methods for Reactor Physics Analysis—I	Crockett A/B
	• Reactor Physics Design, Validation, and Operating Experience—I	Crockett C/D
3:00-3:25 p.m.	**Afternoon Break** *(Sponsored by Exelon)*	
4:00-6:00 p.m.	**ANS President's Special Session:** Radiation Conversations: Informing Consumers and Policy Makers	Texas Ballroom B/C

Tuesday, June 9		Location
7:00 a.m.-5:00 p.m.	**Registration**	Lone Star Foyer
7:00-8:00 a.m.	**Continental Breakfast** *(Sponsored by NuScale Power)*	
8:00-10:00 a.m.	**Spouse/Guest Hospitality**	Hospitality Suite
8:30-11:30 a.m.	**Technical Sessions**	
	• Environmental Monitoring of Nuclear Sites: Aspect Importance and Challenges–Panel	Lone Star A
	• University Research in Fuel Cycles and Waste Management	Lone Star B
	• Experimental Thermal Hydraulics	Lone Star C
	• Transport and Computational Methods	Lone Star D
	• Waste Management for Decommissioning–Panel	Lone Star E
	• Structural Materials and Advanced Measurements for Nuclear Applications	Lone Star F
	• Best of Radiation Protection and Shielding Division 2014—I	Presidio A
	• Breaking the Barrier Between Research and Industrial Implementation–Panel	Presidio B
	• Nuclear Installations Safety: General	Presidio C
	• Advanced Monte Carlo Methods for Reactor Physics Analysis—II	Crockett A/B
	• Reactor Analysis Methods—I	Crockett C/D
10:00-10:25 a.m.	**Morning Break** *(Sponsored by Northrop Grumman)*	
11:30 a.m.-1:00 p.m.	**OPD Honors and Awards Luncheon** ***(A ticket is required to attend)***	Offsite at Fogo de Chao
12:00-1:00 p.m.	**Attendee Lunch**	Lone Star Foyer
1:00-4:00 p.m.	**Technical Sessions**	
	• Fuel Cycle Simulators	Lone Star A
	• Modeling and Simulation	Lone Star B
	• Thermal Hydraulics: General—II	Lone Star C
	• Small Modular Reactors (SMRs): Reactor Physics and Fuel Cycle	Lone StarD
	• Data, Analysis, and Operations for Nuclear Criticality Safety	Lone Star E
	• Are There Customers in the U.S. for Advanced Nuclear Reactors?–Panel	Lone Star F
	• Best of Radiation Protection and Shielding Division 2014—II	Presidio A
	• New Nuclear Construction Around the World—Status Report–Panel	Presidio B

Tuesday, June 9 (continued)		Location
	• Nexus Between Safety and Cyber Security–Panel	Presidio C
	• Isotopes and Radiation: General	Crockett A/B
	• Innovations in Radiation Detectors: New Designs, Improvements, and Applications	Crockett A/B
	• Reactor Physics: General—I	Crockett C/D
3:00-3:25 p.m.	**Afternoon Break** *(Sponsored by Northrop Grumman)*	
4:00-6:00 p.m.	**General Chair's Special Session:** New Reactor Concepts and Licensing	Texas Ballroom B/C
4:00-6:00 p.m.	**Technical Sessions**	
	• Recycle and Reuse of Used Nuclear Fuel Resources	Lone Star A
	• Nuclear Nonproliferation Policy: General	Lone Star D
	• Decommissioning and Environmental Sciences: General	Lone Star F
	• Fusion Energy: General	Presidio A
	• Transient Testing of Nuclear Fuels at TREAT and Other Associated Topics—I	Presidio B
	• Accelerator Applications: General	Presidio C
	• Reactor Physics Design, Validation, and Operating Experience—II	Crockett D

Wednesday, June 10		Location
7:00 a.m.-5:00 p.m.	**Registration**	Lone Star Foyer
7:00-8:00 a.m.	**Continental Breakfast** *(Sponsored by URENCO USA)*	
8:00-10:00 a.m.	**Spouse/Guest Hospitality**	Hospitality Suite
8:30-11:30 a.m.	**Technical Sessions**	
	• Cyclus Users–Tutorial	Lone Star A
	• Hybrid Energy: Combining Nuclear and Other Energy Sources	Lone Star B
	• Computational Thermal Hydraulics—I	Lone Star C
	• Mathematical Modeling and Uncertainty Quantification	Lone Star D
	• Education and Training: General	Lone Star E
	• Transient Testing of Nuclear Fuels at TREAT and Other Associated Topics—II	Lone Star F
	• Radiation Protection and Shielding–Roundtable	Presidio A
	• Operations and Power: General	Presidio B
	• Human Factors, Instrumentation and Controls: General—I	Presidio C
	• LWR Fuel Reliability–Panel	Crockett A/B
	• Reactor Analysis Methods—II	Crockett C/D
12:00-1:00 p.m.	**Attendee Lunch**	Lone Star Foyer
1:00-4:00 p.m.	**Technical Sessions**	
	• Cyclus Archetype Developers–Tutorial	Lone Star A
	• Fuel Cycle and Waste Management: General—I	Lone Star B
	• Computational Thermal Hydraulics—II	Lone Star C
	• Nuclear Fission Processes and Data—Panel	Lone Star D
	• Transient Testing of Nuclear Fuels at TREAT and Other Associated Topics—III–Panel	Lone Star F
	• ATTILA for MCNP–Tutorial	Presidio A
	• Human Factors, Instrumentation, and Controls: General—II	Presidio C
	• Current Issues in LWR Core Design and Reactor Engineering Support–Panel	Crockett A/B
	• Reactor Physics: General—II	Crockett C/D
4:00-6:00 p.m.	**Focus on Communications Workshop**	Texas Ballroom B/C
5:45-6:45 p.m.	**ANS Annual Business Meeting**	Lone Star C

Thursday, June 11		Location
7:00 a.m.-2:00 p.m.	**Registration**	Lone Star Foyer
7:00-8:00 a.m.	**Continental Breakfast** *(Sponsored by General Atomics)*	
8:00 a.m.-12:00 p.m.	**Technical Tour:** SAWS Dos Rios Waste Water Treatment Facility and San Antonio River Authority (SARA)	Departs from the Grand Hyatt Lobby
8:30-11:30 a.m.	**Technical Sessions**	
	• Fuel Cycle and Waste Management: General—II	Lone Star B
	• Thermal Hydraulics: General—III	Lone Star C
	• ANS 8 Standards–Forum	Lone Star D
	• Nuclear Fuels	Lone Star F
	• Progress in Student's Research and Design Projects	Crockett A/B
	• Reactor Physics: General—III	Crockett C/D

REGISTRATION

Meeting registration will be located in the Lone Star Foyer A area at the Grand Hyatt San Antonio, Saturday-Thursday.

Meeting registration is required for all attendees and presenters. Name badges must be worn during all technical sessions and events.

REGISTRATION HOURS:

Saturday, June 6
2:00-5:00 p.m.
Sunday, June 7
7:00 a.m.-7:00 p.m.
Monday, June 8
7:00 a.m.-7:00 p.m.
Tuesday, June 9
7:00 a.m.-5:00 p.m.
Wednesday, June 10
7:00 a.m.-5:00 p.m.
Thursday, June 11
7:00 a.m.-2:00 p.m.

FIRST-TIME ATTENDEE ORIENTATION

Location: Crockett A/B

The ANS Membership Committee will offer an orientation session for first-time ANS meeting attendees.

Learn what goes on at national meetings, how the national organization works, and how to get involved at the national and local levels.

Whether you are a member or not, student or professional, if this is your first ANS national meeting, the Membership Committee invites you to attend this session, which will be held on Sunday, June 7, 1:00-1:30 p.m.

STUDENT PROGRAM

Attendance at the 2015 ANS Annual Meeting is an exciting professional opportunity for college and graduate students.

For information on the Student Program, see the Student Program Instructions document on the Annual Meeting web page.

The Student Program Q&A Meeting will be held Sunday, June 7, 5:00-6:00 p.m. in Travis D.

The Student Headquarters is located in Mission B.

NOTICE FOR SPEAKERS

All speakers and session chairs must sign in at the Speaker/Ribbon Desk located in the ANS Registration Area of the hotel during registration hours.

ANS MEMBER BUSINESS OFFICE

Location: Mission A
Sunday, June 7, through Thursday, June 11 from 8:00 a.m.-5:00 p.m.

ANS CONFERENCE OFFICE

Location: Bowie A
Sunday, June 7, through Thursday, June 11 from 8:00 a.m.-5:00 p.m.

ANS MEDIA CENTER

Location: Bowie C
Monday, June 8, 7:45 a.m.-5:00 p.m.
Tuesday, June 9 & Wednesday, June 10, 8:00 a.m.-4:00 p.m.

SPOUSE/GUEST HOSPITALITY

Spouse/guest hospitality breakfast will be served in the Hospitality Suite 1258, from 8:00-10:00 a.m., Monday through Wednesday. Continental breakfast will be served each morning.

Spouse/guest registration is required for admittance to the spouse/guest hospitality breakfast.

Spouse/guest registration includes one ticket to the President's Reception and admittance to the spouse/guest breakfast only - it does not include technical sessions or other events.

ATTENTION RUNNERS: ANS FUN RUN

On Tuesday, June 9 there will be a noncompetitive run starting at 6:00 a.m. from the lobby entrance of the hotel.

We hope you can join us. Bring shoes and a big smile.

ANS PRESIDENT'S RECEPTION

Location: Texas Ballroom D/E

Sunday, June 7 • 6:00-8:30 p.m.

All attendees are invited to enjoy an evening of networking. This event is included in your registration fee. Guests are welcome to attend with a purchased ticket.

OPENING PLENARY SESSION

Nuclear Technology: An Essential Part of the Solution

Location: Texas Ballroom A/B/C

Monday, June 8 • 8:00-11:30 a.m.

Presenter: Dr. Dale Klein *(Associate Vice-Chancellor for Research at The University of Texas System and past Chairman of the U.S. Nuclear Regulatory Commission)*

The world-wide demand for electrical energy continues to grow and utilities are strategically meeting this demand with a diverse energy portfolio. Nuclear based electricity has many benefits including cost and risk diversification. Speakers will discuss why nuclear technology is an essential part of the solution to meet present and future energy needs.

Speakers:

- Doyle Beneby *(President and CEO CPS Energy),* Welcome from CPS Energy
- Tom Fanning *(Chairman, CEO Southern Company),* Cyber Security, Physical Security, and America's Energy Future
- David Scott *(Former Executive Director of Economics and Energy Affairs at the Executive Affairs Authority, United Arab Emirates),* Decision for Nuclear in the United Arab Emirates
- Scott Tinker *(Director, Bureau of Economics Geology, The University of Texas at Austin),* Shale Gas: Bubble or Coming Boom and Possible Impact on Nuclear Energy

ANS PRESIDENT'S SPECIAL SESSION

Radiation Conversations: Informing Consumers and Policy Makers

Location: Texas Ballroom B/C

Monday, June 8, 4:00-6:00 p.m.

Presenter: Dr. Michaele (Mikey) Brady Raap *(ANS President; Chief Engineer, Pacific Northwest National Laboratory)*

Following up on the Radiation Dose Communications Summit hosted by the ANS Center for Nuclear Science and Technology Information (CNSTI) and the Health Physics Society on February 4, 2015, this session will address improving the way nuclear professionals communicate with the general public and policy makers about radiation dose. CNSTI will be the workspace for continuing the work of the consortium involved in the Summit.

Speakers:

- Dr. Michaele (Mikey) Brady Raap: Summit Results and Ongoing Consortium Collaboration
- Dr. Mary Lou Dunzik-Gougar *(Acting Chair, Nuclear Engineering, Idaho State University):* Radiation as a Natural Part of Our World
- Dr. Alan Waltar *(Former ANS President):* Benefits of radiation
- Dr. John Boice *(President, National Council on Radiation Protection & Measurement):* Mature Radiation Knowledge and the One Million Radiation Worker Study

OPD HONORS AND AWARDS LUNCHEON

Location: Fogo de Chao

Tuesday, June 9 • 11:30 a.m.-1:00 p.m.

(Ticket is required • Seating is limited)

The Operations and Power Division Luncheon will be held at Fogo de Chao, 849 E. Commerce St. (2 blocks from the hotel.)

CHAIR'S SPECIAL SESSION

New Reactor Concepts and Licensing

Location: Texas Ballroom B/C
Tuesday, June 9 • 4:00-6:00 p.m.

Presenter: Dr. Dale Klein *(Associate Vice-Chancellor for Research at The University of Texas System and past Chairman of the U.S. Nuclear Regulatory Commission)*

Industry leaders and U.S. Nuclear Regulatory Commission (NRC) management will discuss the nexus of new reactor concept development along with regulatory practices. The session will develop a better understanding of the design challenges, procedures, timelines and licensing of new reactor technologies.

Speakers

- John Parmentola *(Senior Vice President, General Atomics),* Community Support for a New Test Reactor
- Kevan Weaver *(Director of Technology Integration, TerraPower),* TerraPower and the Traveling Wave Reactor
- Gary Holahan *(Deputy Director, Office of New Reactors, U.S. Nuclear Regulatory Commission),* Advanced Non-LWR Licensing Strategies: Past, Present and Possible Future
- Jose Reyes *(Chief Technology Officer, NuScale Power),* The NuScale Diverse Energy Platform
- Michael Mayfield *(Director, Division of Advanced Reactors and Rulemaking, Office of New Reactors, U.S. Nuclear Regulatory Commission),* NRC's SMR Licensing Process – Ready to Implement

FOCUS ON COMMUNICATIONS WORKSHOP

Location: Texas Ballroom B/C
Wednesday, June 10, 4:00 -6:00 p.m.

ANS ANNUAL BUSINESS MEETING

Location: Lone Star C
Wednesday, June 10 • 5:45-6:45 p.m.

ANS encourages all members to attend the Annual Business Meeting. During the Business Meeting, members will have the opportunity to vote for officers and directors, receive reports from the President and other Society leaders, and ask questions and make comments on Society issues.

TECHNICAL TOUR: SAWS DOS RIOS WASTE WATER TREATMENT FACILITY AND SAN ANTONIO RIVER AUTHORITY (SARA)

Thursday, June 11 • 8:30 a.m.-12:00 p.m

Departing from the Grand Hyatt San Antonio.
A valid driver's license or passport will be required for access to SAWS.
Tickets can be purchased at the ANS Registration Desk. The cost is $20.00 (space is limited.)

San Antonio is the seventh largest city in the country and the fastest growing city in Texas. As a community we recognize that our long-term economic prosperity is contingent on readily available, cost competitive energy and water. In partnership between the civic, business and academic community, San Antonio has emerged as a national and global leader in key elements of the energy-water nexus, including having the nation's largest reclaimed water system, one of the nations largest aquifer storage and recovery systems, 20MW of solar to support energy consumption at a water recycling facility, and numerous facilities (San Antonio Riverwalk as well as coal and gas generation facilities) thriving due to recycled water.

Attendees will be transported by bus to the Dos Rios Wastewater Treatment Facility where they will see water recycled to be used at the local coal and natural gas plants for cooling as well as for local industry (including the Toyota Production Facility) and as base flow for the San Antonio River. They will see the Sun Edison Sinken Solar Facility, roughtly 20MW of solar providing energy to support the wastewater treatment facility. The tour will continue to the Mission Reach of the San Antonio River where the San Antonio River Authority will give a short presentation and attendees will have the opportunity to visit the historic Mission Concepcion.

(Asterisks indicate special sessions. Parentheses indicate co-sponorship.)

Special Sessions

*Opening Plenary: Nuclear Technology: An Essential Part of the Solution, Mon. a.m. (8:00-11:30 a.m.)
*ANS President's Special Session: Radiation Conversations: Informing Consumers and Policy Makers, Mon. p.m. (4:00-6:00 p.m.)
*General Chair's Special Session: New Reactor Concepts and Licensing, Tues. p.m. (4:00-6:00 p.m.)

Accelerator Applications (AAD)

Accelerator Applications: General, Tues. p.m.
(Progress in Students Research and Design Projects), Thurs. a.m.

Aerospace Nuclear Science and Technology (ANST)

(Progress in Students Research and Design Projects), Thurs. a.m.

Decommissioning and Environmental Sciences (DESD)

Waste Management for Decommissioning–Panel, Tues. a.m.
Decommissioning and Environmental Sciences: General, Tues. p.m.

Education, Training, and Workforce Development (ETWDD)

Focus on Communications Endorsing Nuclear Energy–Panel, Mon. p.m.
Focus on Communications: Improving our Advocacy–Panel, Mon. p.m.
Education and Training: General, Wed. a.m.
(Progress in Students Research and Design Projects), Thurs. a.m.

Fuel Cycle and Waste Management (FCWMD)

International Status of Used Fuel and HLW Management: A Review of the 2015 International High-Level Radioactive Waste Management Conference–Panel, Mon. p.m.
Environmental Monitoring of Nuclear Sites: Aspect, Importance and Challenges–Panel, Tues. a.m.
University Research in Fuel Cycles and Waste Management, Tues. a.m.
Fuel Cycle Simulators, Tues. p.m.
Are There Customers in the U.S. for Advanced Nuclear Reactors?–Panel, Tues. p.m.
(Small Modular Reactors (SMRs): Reactor Physics and Fuel Cycle), Tues. p.m.
Recycle and Reuse of Used Nuclear Fuel Resources, Tues. p.m.
(Nuclear Nonproliferation Policy: General), Tues. p.m.
Cyclus User's–Tutorial, Wed. a.m.
Hybrid Energy: Combining Nuclear and Other Energy Sources, Wed. a.m.
Cyclus Archetype Developers–Tutorial, Wed. p.m.
Fuel Cycle and Waste Management: General—I, Wed. p.m.
Fuel Cycle and Waste Management: General—II. Thurs. a.m.

Fusion Energy (FED)

Fusion Energy: General, Tues. p.m.
(Progress in Students Research and Design Projects), Thurs. a.m.

Human Factors, Instrumentation, and Controls (HFICD)

(Nexus Between Safety and Cyber Security), Tues. p.m.
Human Factors, Instrumentation and Controls: General—I, Wed. a.m.
Human Factors, Instrumentation, and Controls: General—II, Wed. p.m.

Isotopes and Radiation (IRD)

Isotopes and Radiation: General, Tues. p.m.
Innovations in Radiation Detectors: New Designs, Improvements, and Applications, Tues. p.m.
(Nuclear Nonproliferation Policy: General), Tues. p.m.

Materials Science and Technology (MSTD)

Accident Tolerant Fuel, Mon. p.m.
Structural Materials and Advanced Measurements for Nuclear Applications, Tues. a.m.
Modeling and Simulation, Tues. p.m.
Transient Testing of Nuclear Fuels at TREAT and Other Associated Topics—I, Tues. p.m.
Transient Testing of Nuclear Fuels at TREAT and Other Associated Topics—II, Wed. a.m.
Transient Testing of Nuclear Fuels at TREAT and Other Associated Topics—III–Panel, Wed. p.m.
Nuclear Fuels, Thurs. a.m.

Mathematics and Computation (MCD)

Current Issues in Computational Methods–Roundtable: Analyzing Big Data, Mon. p.m.
(Advanced Monte Carlo Methods for Reactor Physics Analysis—I), Mon. p.m.
(Advanced Monte Carlo Methods for Reactor Physics Analysis—II), Tues. a.m.
Transport and Computational Methods, Tues. a.m.
Mathematical Modeling and Uncertainty Quantification, Wed. a.m.

Nuclear Criticality Safety (NCSD)

Data, Analysis and Operations for Nuclear Criticality Safety, Tues. p.m.
Nuclear Fission Processes and Data–Panel, Wed. p.m.
ANS 8 Standards–Forum. Thurs. a.m.

Nuclear Installations Safety (NISD)

Nuclear Safety R&D at the Department of Energy, Mon. p.m.
Nuclear Installations Safety: General, Tues. a.m.
Nexus Between Safety and Cyber Security–Panel, Tues. p.m.
(Nuclear Nonproliferation Policy: General), Tues. p.m.

Nuclear Nonproliferation Policy (NNPD)

Nuclear Nonproliferation Policy: General, Tues. p.m.

Operations and Power (OPD)

Breaking the Barrier Between Research and Implementation–Panel. Tues. a.m.
New Nuclear Construction Around the World—Status Report–Panel, Tues. p.m.
Operations and Power: General, Wed. a.m.

Radiation Protection and Shielding (RPSD)

Computational Tools for Radiation Protection and Shielding, Mon. p.m.
Best of RPSD 2014—I, Tues. a.m.
Best of RPSD 2014—II, Tues. p.m.
(Nuclear Nonproliferation Policy: General), Tues. p.m.
Radiation Protection and Shielding–Roundtable, Wed. a.m.
ATTILA for MCNP–Tutorial, Wed. p.m.

Reactor Physics (RPD)

Advanced Monte Carlo Methods for Reactor Physics Analysis—I, Mon. p.m.
Advanced Monte Carlo Methods for Reactor Physics Analysis—II, Tues. a.m.
Reactor Physics Design, Validation, and Operating Experience—I, Mon. p.m.
Reactor Physics Design, Validation, and Operating Experience—II, Tues. p.m.
Reactor Analysis Methods—I, Tues. a.m.
Reactor Analysis Methods—II, Wed. a.m.
Small Modular Reactors (SMRs): Reactor Physics and Fuel Cycle, Tues. p.m.
Reactor Physics: General—I, Tues. p.m.
Reactor Physics: General—II, Wed. p.m.
Reactor Physics: General—III, Thurs. a.m.
LWR Fuel Reliability–Panel, Wed. a.m.
Current Issues in LWR Core Design and Reactor Engineering Support–Panel, Wed. p.m.
Progress in Students Research and Design Projects, Thurs. a.m.

Robotics and Remote Systems (RRSD)

Robotics and Remote Systems Topics, Mon. p.m.

Thermal Hydraulics (THD)

Thermal Hydraulics: General—I, Mon. p.m.
Thermal Hydraulics: General—II, Tues. p.m.
Thermal Hydraulics: General—III, Thurs. a.m.
Experimental Thermal Hydraulics, Tues. a.m.
Computational Thermal Hydraulics—I, Wed. a.m.
Computational Thermal Hydraulics—II, Wed. p.m.

Young Members Group (YMG)

(Nuclear Installations Safety: General), Tues. a.m.
(University Research in Fuel Cycles and Waste Management), Tues. a.m.
(Nuclear Nonproliferation Policy: General), Tues. p.m.

International Status of Used Fuel and HLW Management: A Review of the 2015 International High-Level Radioactive Waste Management Conference–Panel

Sponsored by FCWMD

Session Organizer and Chair: Andrew G. Sowder *(EPRI)*

Lone Star A: 1:00-4:00 p.m.

The IHLRWM series provides a leading international forum for accessing and exchanging the latest information on scientific, technical, regulatory, and social aspects of the back end of the nuclear fuel cycle. In keeping with the theme, "Real World Solutions for Achieving Disposal of Used Fuel and HLW through Integrated Management," the conference featured reports of progress from an international perspective in various aspects of HLW management, e.g., storage, transportation, and disposal. Panelists will review and summarize highlights related to these themes and report on the global health of used fuel and HLW management.

Panelists:

- Mick Apted *(INTERA Inc.)*
- John Kessler *(EPRI)*
- Ruth Weiner *(Boston Government Services)*
- Steve Nesbit *(Duke Energy)*
- Andrew Sowder *(EPRI)*

Thermal Hydraulics: General—I

Sponsored by THD

Session Organizer: John C. Luxat *(McMaster Univ)*

Cochairs: Xiaodong Sun *(Ohio State Univ)*, David L. Aumiller *(BAPL)*

Lone Star C: 1:00-3:55 p.m.

Natural Convection Flow Pattern Analysis for a Large-Scaled Saltstone Facility, Si Young Lee *(SRNL)*

1:25 p.m.

Transient Convection from Forced to Natural with Flow Reversal for CFD Validation, Blake W. Lance, Barton L. Smith *(Utah State Univ)*

1:50 p.m.

Predicted Effects of Noncondensable Gases in a Boiling/Condensing Facility, Juan J. Carbajo *(ORNL)*

2:15 p.m.

Steam-Water Flooding Studies at High Pressure for Severe Accident Application, K. Vierow, N. Mohammed *(TAMU)*

2:40 p.m.

Modeling the Vitrification of Hanford Tank Waste, Donna Post Guillen *(INL)*, Clyde J. Beers *(Univ of Michigan)*

3:05 p.m.

CFD Benchmark Study for Modeling of Hydrogen Distribution in the Containment, F. S. Sarikurt, Y. A. Hassan *(TAMU)*

3:30 p.m.

Desalination Applications of 10 MWe Toshiba 4S, A. Reimers, E. Schneider, M. Flicker, M. E. Webber, J. Morton *(Univ of Texas, Austin)*

Current Issues in Computational Methods–Roundtable

Sponsored by MCD

Session Organizer and Chair: Tunc Aldemir *(Ohio State)*

Lone Star D: 1:00-4:00 p.m.

With the recent best estimate plus uncertainty (BEPU) approach to reactor safety, which also allows quantification of safety margins, it has become necessary to run a large number of parametric studies for the adequate coverage of the uncertainty space with adequate confidence. The resulting data produced can be on the order of tens of terabytes and difficult to analyze in its raw form. The roundtable will focus on the methods and tools that can assist the analyst to extract useful information from such datasets.

Focus on Communications: Endorsing Nuclear Energy–Panel

Sponsored by ETWDD

Session Organizer and Chair: Laura Hermann *(Potomac Communications Group)*

Lone Star E: 1:00-2:30 p.m.

From celebrity spokespeople to credible validators, more voices are talking about nuclear science and nuclear energy. Popular culture portrays nuclear technology, for better or worse, in recent movies like Godzilla and Star Trek. Big name supporters like Richard Branson, Paul Allen, and Bill Gates draw mainstream media attention to nuclear energy's benefits. And national governments like Malaysia, Bangladesh, and Kenya have captured the attention of diplomatic circles as they include nuclear energy in their country's long-term energy plans. This session will explore both opportunities and barriers to positively position nuclear science and nuclear energy as new perspectives on the technology shape international public opinion.

Panelists:

- Tami Hollar *(NPI)*
- Kevan Weaver *(TerraPower)*
- Benjamin Holtzman *(Westinghouse)*

Focus on Communications: Improving our Advocacy–Panel

Sponsored by ETWDD

Session Organizer and Chair: Mimi H. Limbach *(Potomac Communications Group)*

Lone Star E: 2:35-4:00 p.m.

Considerable research exists about how best to make the case for issues of controversy. Nuclear energy is such an issue. In this session, experts will consider this research and how it applies to moving nuclear energy forward. They will share their experiences and those techniques and approaches that consistently work to open the minds of the public and policy makers to nuclear energy.

Panelists:

- Scott Peterson *(Communications for the Nuclear Energy Inst)*
- Buddy Eller *(STP Nuclear Operating Co.)*
- Bryan Wilkes *(CBI)*

Note: This session will immediately follow the preceding session, which will begin at 1:00 p.m.

Accident Tolerant Fuel

Sponsored by MSTD

Session Organizer and Chair: Kenneth J. Geelhood *(PNNL)*

Lone Star F: 1:00-3:30 p.m.

1:00 p.m.

Towards Understanding FCCI: Modeling Cerium Solid Transport in Metal Fuels, C. W. Arnold, Jack Galloway, Cetin Unal *(LANL)*

1:25 p.m.

TRISO Coating Development for Uranium Nitride Kernels, Brian Jolly, Terrance Lindemer, Kurt Terrani *(ORNL)*

1:50 p.m.

Uniform Corrosion of Model FeCrAl Alloys in LWR Coolants, Kurt Terrani *(ORNL),* Young-Jin Kim *(GE Global Research Center),* Bruce Pint *(ORNL)*

2:15 p.m.

Impact of Fuel Rod Coatings on Reactor Performance and Safety, I. R. Stewart, L. F. Miller, B. D. Wirth, K. E. Sickafus *(Univ of Tennessee)*

2:40 p.m.

Discussion of Minimum Stress Allowables for SiC Composite Cladding, Lance L. Snead, Yutai Katoh, Kurt Terrani *(ORNL)*

3:05 p.m.

Fabrication of FeCrAl Coated Zr-alloy Fuel Cladding by Cold Spray Technique, Dong Jun Park, Hyun Gil Kim, Jeong Yong Park, Yang Il Jung, Jung Hwan Park, Yang Hyun Koo *(KAERI)*

Computational Tools for Radiation Protection and Shielding

Sponsored by RPSD

Session Organizer: Peter F. Caracappa *(RPI)*

Chair: Charlotta E. Sanders *(Sanders Eng)*

Presidio A: 1:00-2:40 p.m.

1:00 p.m.

Preliminary MCNPX Modeling of the F-127 Source Shipping Container for the GB-127 CO-60 Irradiator Facility, Maritza R. Gual, Pablo A. Grossi *(CDTN/CNEN)*, Carlos A. Caballero *(Radiation Consulting Group)*, L. C. D. Ladeira, F. S. Lameiras *(CDTN/CNEN)*

1:25 p.m.

Production of Heavy Clusters with an Expanded Coalescence Model in CEM, Leslie M. Kerby *(LANL, Univ of Idaho)*, Stepan G. Mashnik *(LANL)*

1:50 p.m.

Characterization of the Neutron Detectability of Highly Enriched Uranium, G. E. McMath, T. A. Wilcox, G. W. McKinney *(LANL)*

2:15 p.m.

A Rapid Method for Calculating K_{eff} Values for Spent Partitions of Radially or Axially Inhomogeneous Densities, Where Surfaces of Fuel Elements are Tapered with Porosity, E. V. Steinfelds, K. Andrew, P. Womble *(Western Kentucky Univ)*

Robotics and Remote Systems Topics

Sponsored by RRSD

Session Organizer: Mark Noakes *(ORNL)*

Chair: Chris Eason *(Souriau)*

Presidio B: 1:00-2:40 p.m.

1:00 p.m.

Performing Neutron Imaging of Mock Uranium Fuel Rods with a Robotic Manipulator, Joseph Hashem, Mitch Pryor *(Univ of Texas, Austin)*

1:25 p.m.

Strategy to Enhance Applicability of the KAERI's Remote Response Technology, Young Choi, Kyungmin Jeong *(KAERI)*, Inn Seock Kim *(ISSA Technology)*

1:50 p.m.

Collaborative Robot Nuclear Surveying (CRONUS) Project, Martin Zavala, Dooroo Kim, Anna Erickson, Mark Costello *(Georgia Tech)*

2:15 p.m.

Detection and Localization of Gamma Ray Source Using a Wireless Robot, Akanksha Singh, Shikha Prasad, Abhijit Verma *(Indian Institute of Technology)*

Nuclear Safety R&D at the Department of Energy

Sponsored by NISD

Session Organizer and Chair: Alan Levin *(DOE)*

Presidio C: 1:00-3:55 p.m.

1:00 p.m.

The Department of Energy's Nuclear Safety Research and Development Program, Alan E. Levin *(DOE)*

1:25 p.m.

Designing an Ergonomically Sound Glovebox Glove, Cindy Lawton, Whitney Land, Jude Oka *(LANL)*

1:50 p.m.

Stochastic Calculation of Radioactive Material Release Dose Consequences, Chad L. Pope, Kushal Bhattarai *(Idaho State Univ)*, Jason P. Andrus *(INL)*

2:15 p.m.

Computer Capability to Substantiate DOE-HDBK-3010 Data, David L. Y. Louie, Alexander L. Brown, Louis Restrepo *(SNL)*

2:40 p.m.

A Test Method for Characterization of Fire Induced Uranium Aerosols, Douglas K. Clark *(Y-12)*

3:05 p.m.

Controlled Oxidation of Tritium-Aged $LaNi_{4.25}Al_{0.75}$ Hydride to Support Retired Bed Disposition, G. C. Staack, M. L. Crowder, M. H. Tosten *(SRNL)*

3:30 p.m.

Validation of Hydrogen Exchange Methodology on Molecular Sieves for Tritium Removal from Contaminated Water, G. A. Morgan *(SRNL)*

Advanced Monte Carlo Methods for Reactor Physics Analysis—I

Sponsored by RPD; cosponsored by MCD

Session Organizer: Mark D. DeHart *(INL)*

Chair: Cristian Rabiti *(INL)*

Crockett A/B: 1:00-3:05 p.m.

1:00 p.m.

Tally Precision Triggers for the OpenMC Monte Carlo Code, Qicang Shen *(Tsinghua Univ),* William Boyd, Benoit Forget, Kord Smith *(MIT)*

1:25 p.m.

Research on On-the-fly Doppler Broadening Based on the Stochastic Sampling Algorithm, Feng Yang, Jin-Gang Liang, Gang-Lin Yu, Kan Wang *(Tsinghua Univ)*

1:50 p.m.

Implementation of Explicit Modeling Approach in RMC Code for Stochastic Media Analysis, Shichang Liu, Ding She, Jin-Gang Liang, Kan Wang *(Tsinghua Univ)*

2:15 p.m.

Efficient Execution of Monte Carlo Simulation Based on Pseudo-Scattering using GPU, Takuya Okubo, Tomohiro Endo, Akio Yamamoto *(Nagoya Univ)*

2:40 p.m.

A Case Study of the Higher-Mode Errors in Monte Carlo Source Convergence, Ding She, Zhihong Liu, Jing Zhao, Kan Wang *(Tsinghua Univ)*

Reactor Physics Design, Validation, and Operating Experience—I

Sponsored by RPD

Session Organizer: Alexander Stanculescu *(INL)*

Chair: Margaret Marshall *(INL)*

Crockett C/D: 1:00-2:40 p.m.

1:00 p.m.

Nuclear Data Sensitivity and Uncertainty Analysis for the PWR Burn-up Pin-cell Benchmark with RMC Code, Yishu Qiu, Ding She, Kan Wang *(Tsinghua Univ)*

1:25 p.m.

Xe-135m Impact on the PCR Measurement of CANDU6 Core, Jaeha Kim, Yonghee Kim *(KAIST)*

1:50 p.m.

Benchmark Evaluation of HTR-PROTEUS Absorber Rod Worths (Cores 5 through 8), John D. Bess *(INL)*

2:15 p.m.

New Reactor Physics Benchmark Data in the March 2015 Edition of the IRPhEP Handbook, John D. Bess *(INL),* Jim Gulliford *(OECD)*

Environmental Monitoring of Nuclear Sites: Aspect Importance and Challenges–Panel

Sponsored by FCWMD

Session Organizer and Chair: Jean-Francois Lucchini *(LANL)*

Lone Star A: 8:30-11:30 a.m.

This session, initially focused on the WIPP, will be extended to include different environmental monitoring programs from all over the world.

The questions that will be addressed are: How is the environmental monitoring program being implemented? Who are the main actors? What are the challenges? What are the lessons learned from recent events? How is it accepted by the public?

Following each participant's presentation will be an open discussion on the presented topics, the differences between the various cases, what we can learn from each other, and where we are heading.

Panelists:

- Akira Kirishima *(Tohoku Univ)*
- Guillaume Manificat *(IRSN)*
- Roger Nelson *(DOE-CBFO)*
- Punam Thakur *(NMSU\CEMRC)*

University Research in Fuel Cycles and Waste Management

Sponsored by FCWMD; cosponsored by YMG

Session Organizer: Jack D. Law *(INL)*

Cochairs: Andrew R. Griffith *(DOE),* Matthew Gidden *(Univ of Wisconsin, Madison)*

Lone Star B: 8:30-11:50 a.m.

8:30 a.m.

Krypton Removal from the Off-Gas Stream Using the Hollow Carbon Based Nanosorbent, Sachin U. Nandanwar, Kai Coldsnow, Vivek Utgikar, D. Eric Aston *(Univ of Idaho),* Piyush Sabharwall *(INL)*

8:55 a.m.

Protection of Zirconium Fuel Cladding by Aluminum Surface Modification, James Carr, Gokul Vasudevamurthy *(VCU)*

9:20 a.m.

Computational Study of Self-Association of Tri-n-butyl Phosphate in n-Dodecane, Quynh N. Yo, Mikael Nilsson, Hung D. Nguyen *(Univ of California, Irvine)*

9:45 a.m.

Adsorption of I2 from Off-Gases from Used-Fuel Reprocessing Plants, Yue Nan *(Syracuse Univ),* Austin P. Ladshaw, Sotira Yiacoumi *(Georgia Tech),* Costas Tsouris *(Georgia Tech, ORNL),* David W. DePaoli *(ORNL),* Lawrence L. Tavlarides *(Syracuse Univ)*

10:10 a.m.

Effects of Graphical Information on Public Perception toward Nuclear Energy, Ishoc U. Salaam, John M. Swanson, Sama Bilbao y León *(VCU)*

10:35 a.m.

Direct Calculation of Concentration-dependent Activity Coefficient of UCl^3 in Molten LiCl-KCl, Wentao Zhou, Jinsuo Zhang *(Ohio State Univ)*

11:00 a.m.

f-Element Complexation in Mixed Extractant UNF Reprocessing, Brian J. Gullekson, Vanessa E. Holfeltz, Alena Paulenova *(Oregon State Univ),* Artem V. Gelis *(ANL)*

11:25 a.m.

Chlorination of Actinide and Rare Oxides for Application to Continuous pyroChemical Reprocessing, Abraham Jurovitzki, Michael Simpson *(Univ of Utah)*

Experimental Thermal Hydraulics

Sponsored by THD

Session Organizer: Wade R. Marcum *(Oregon State Univ)*

Cochairs: Wade R. Marcum *(Oregon State Univ),* Fan-Bill Cheung *(Penn State Univ)*

Lone Star C: 8:30-11:00 a.m.

8:30 a.m.

On the Characterization of a Drop-in Miniplate Experiment – Hydraulic Analysis, Wade R. Marcum, A. Weiss *(Oregon State Univ),* W. F. Jones, Nicolas Woolstenhulme, A. M. Phillips, K. Holdaway *(INL),* M. Moussaoui, P. L. Harmon, T. K. Howard *(Oregon State Univ),* J. Wiest, J. Campbell *(INL)*

8:55 a.m.

On the Characterization of a Drop-in Miniplate Experiment – Structural Response Analysis, Warren Jones *(INL),* Wade R. Marcum, A. Weiss, T. K. Howard *(Oregon State Univ),* Nicolas Woolstenhulme, A. M. Phillips, J. Wiest *(INL)*

9:20 a.m.

Experimental Results from the TAMU Air-Cooled Reactor Cavity Cooling System Experimental Test Facility, John L. Budd, Shamsul A. Sulaiman, Elvis E. Dominguez-Ontiveros, Mario Matos, Yassin A. Hassan *(TAMU)*

9:45 a.m.

The Observation of Boiling Heat Transfer Phenomenon on a Downward Facing Surface, Huai-En Hsieh, Mei-Shiue Chen, Wei-Keng Lin, Bau-Shi Pei *(Tsinghua Univ)*

10:10 a.m.

Steam-jet DCC in Scaled Automatic Depressurization System Sparger of AP1000, Daogang Lu, Yuhao Zhang, Qiong Cao, Fenglei Niu *(North China Electric Power Univ)*

10:35 a.m.

An Experimental Study on the Onset of Nucleate Boiling in Rectangular Channels for Downward Flow, Jung-Hyun Song, Juhyung Lee *(KAIST)*, Soon Heung Chang *(Handong Univ)*, Yong Hoon Jeong *(KAIST)*

Transport and Computational Methods

Sponsored by MCD

Session Organizer: Ryan G. McClarren *(Texas A&M)*

Chair: Forrest B. Brown *(LANL)*

Lone Star D : 8:30-10:10 a.m.

8:30 a.m.

A Remez Algorithm on Finding Polar Angle Quadrature Sets for the Method of Characteristics, Yaqi Wang *(INL)*

8:55 a.m.

Energy Efficiency of High-Performance Computing Platforms for Neutron Transport Calculations, William Boyd *(MIT)*, Kazutomo Yoshii, Andrew Siegel *(ANL)*

9:20 a.m.

Mathematical Methods for Hyperspectral Imaging in Landmine Detection, Ihab Makki, Rafic Younes, Clovis Frances *(Lebanese Univ)*, Massimo Zucchetti *(Politecnico di Torino)*

9:45 a.m.

Nuclear-pointer-based Multilevel Unionized Energy Grid Method in SuperMC2.2, Lijuan Hao, Jing Song, Liqin Hu *(Chinese Academy of Sciences)*

Waste Management for Decommissioning–Panel

Sponsored by DESD; cosponsored by FCWMD

Chair: James J. Byrne *(Byrne & Assoc)*

Lone Star E : 8:30-11:30 a.m.

Waste management is a significant issue in nuclear power plant decommissioning. Sorting, classifying, shipping, and storing waste make up a substantial part of each cost estimate. This session will explore these issues from the shipper's and receiver's perspective and will describe best practices from past and current activities.

Panelists:

- Mike Wiskerchen *(Zion Solutions)*
- Douglas Warren *(Westinghouse)*
- Kayla Harper *(AREVA)*
- Jeff Ginsberg *(Energy Solutions)*
- Chad Hyslop *(U.S. Ecology)*
- Dan Davis *(WCS)*

Structural Materials and Advanced Measurements for Nuclear Applications

Sponsored by MSTD

Session Organizer: Kenneth J. Geelhood *(PNNL)*

Chair: Todd R. Allen *(INL)*

Lone Star F: 8:30-11:25 a.m.

8:30 a.m.

Effects of Thermal and Thermo-Mechanical Treatments on Fe-14Cr-ODS Steels Microstructure, M. Dadé, J. Malaplate *(CEA)*, A. Deschamps *(Univ Grenoble Alpes; CNRS, SIMAP)*

8:55 a.m.

Minor and Trace Elements in Flibe after Purification and Corrosion Testing, Michael R. Ames *(MIT)*

9:20 a.m.

Comparison of Chemical Reactivity of CVC and CVD SiCs with UO2, Chinthaka M. Silva, Lance L. Snead, Yutai Katoh *(ORNL)*

9:45 a.m.

Applications of Transient Grating Spectroscopy to Radiation Materials Science, Cody A. Dennett, Michael P. Short, Sara E. Ferry, Jeffrey K. Eliason, Alexei A. Maznev, Keith A. Nelson *(MIT)*

10:10 a.m.

Design and MCNP6 Simulation of the OSU Cryogenic Irradiation Facility, Benjamin Reinke, Thomas Blue, Brandon Wilson, Michael Eades *(Ohio State Univ)*

10:35 a.m.

Determining Crystallographic Orientation of Material Interfaces to Gauge CRUD Resistance, Vikash K. Mishra *(Univ of Arkansas)*, Michael P. Short *(MIT)*

Best of Radiation Protection and Shielding Division 2014—I

Sponsored by RPSD

Session Organizer: Thomas M. Miller *(ORNL)*

Chair: Peter F. Caracappa *(RPI)*

Presidio A: 8:30-9:45 a.m.

8:30 a.m.

Computational Assessment of Naturally Occurring Background Radiation Produced by Extraterrestrial Sources, Thomas M. Miller *(ORNL)*, Wouter C. de Wet *(Univ of Tennessee)*, Bruce W. Patton *(ORNL)*

8:55 a.m.

Parallel Monte Carlo Methods for Heterogeneous Hardware Computer Systems Using GPUs and Coprocessors: Recent Development of ARCHER Code, Tianyu Liu, Lin Su, Xining Du, Hui Lin, Kris Zieb, Wei Ji, Peter F. Caracappa, X. George Xu *(RPI)*

9:20 a.m.

The Standalone Package for Enhanced Estimation of Dose Distribution, Wouter C. de Wet, Lawrence W. Townsend *(Univ of Tennessee)*, X. George Xu *(RPI)*, Whitney J. Smith *(Univ of Tennessee)*

Breaking the Barrier Between Research and Industrial Implementation–Panel

Sponsored by OPD

Session Organizer and Chair: Brycen L. Wendt *(Idaho State Univ)*

Presidio B: 8:30-11:30 a.m.

Academic research in nuclear science and engineering has generated many discoveries and conclusions over the last decade. The nuclear industry has likewise contributed advancements and innovations in nuclear technologies. However, academic, national lab, and industrial interests are often not aligned – some even perceive the nuclear field with a significant barrier splitting the three. Further, public opinion and regulatory constraints slow down the implementation of new and novel concepts.

This panel will discuss the connection (or disconnect) between academia, labs, and industry, what needs to be done to "Break the Barrier", and how to strengthen the relationship between the three.

Panelists:

- Rita Baranwal *(Westinghouse)*
- Dennis Hussey *(EPRI)*
- Steve Nesbit *(Duke Energy)*
- Basma Shalaby *(UNENE)*
- Jess Gehin *(ORNL)*
- Daniel Cole *(Univ of Pittsburgh)*

Nuclear Installations Safety: General

Sponsored by NISD; cosponsored by YMG

Session Organizer: Matthew R. Denman *(SNL)*

Chair: Girija Shukla *(NRC)*

Presidio C: 8:30-9:20 a.m.

8:30 a.m.

The SOARCA Surry Power Station Short-Term Station Blackout Uncertainty Analysis: MACCS Parameter Development, Nathan E. Bixler, Douglas M. Osborn, Scott Weber, Cédric J. Sallaberry, Aubrey C. Eckert-Gallup, Joseph A. Jones *(SNL),* S. Tina Ghosh *(NRC)*

8:55 a.m.

Limit Surface Approach Defining Success Criteria with Uncertainties in Level 1 PSA, Douglas A. Fynan, Kwang-Il Ahn *(KAERI),* John C. Lee *(Univ of Michigan)*

Advanced Monte Carlo Methods for Reactor Physics Analysis—II

Sponsored by RPD; cosponsored by MCD

Session Organizer and Chair: Mark D. DeHart *(INL)*

Crockett A/B: 8:30-10:10 a.m.

8:30 a.m.

Implementation of Inline Equilibrium Xenon Method in RMC Code, Zonghuan Chen, Gang-Lin Yu, Jin'Gang Liang, Kan Wang *(Tsinghua Univ)*

8:55 a.m.

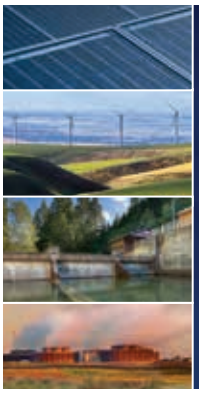
Development of In-Line Temperature Dependent Cross Sections Processing Capability in RMC Code, Jiankai Yu, Jin'Gang Liang, Kan Wang *(Tsinghua Univ)*

9:20 a.m.

HTGR Fuel Element Depletion Benchmark: Results for Infinite Fuel Pebble Lattice, Ding She, Chunlin Wei, Zhihong Liu, Shichang Liu, Kan Wang *(Tsinghua Univ)*

9:45 a.m.

The Implementation of Modified Power Iteration Method in Continuous Energy Monte Carlo Simulation, Zhang Peng, Hyunsuk Lee, Deokjung Lee *(UNIST)*



Reactor Analysis Methods—I

Sponsored by RPD

Session Organizer: Alexander Stanculescu *(INL)*

Chair: Akio Yamamoto *(Nagoya Univ)*

Crockett C/D: 8:30-11:00 a.m.

8:30 a.m.

Dynamic Simulation of Nuclear Reactors Experiencing High Rates of Deformation, Jesse Johns *(Nimbus Innovations),* Ville Valtavirta *(VTT),* Roger Lenard *(Little Prairie Services Trust)*

8:55 a.m.

FLUENT-Based Computation for a Time-Space-Dependent Neutron Kinetics Model, Dalin Zhang, Jian Ge, Wenxi Tian, Suizheng Qiu *(Xi'an Jiaotong Univ)*

9:20 a.m.

Development of Core Sensitivity Analysis Based on Reduced-Order Modeling using Assembly Calculations, Ryota Katano, Akio Yamamoto, Tomohiro Endo *(Nagoya Univ)*

9:45 a.m.

Convergence Analysis of Two-Node CMFD Method Applied to Neutron Diffusion Eigenvalue Problem, Yongjun Jeong, Jinsu Park *(UNIST),* Hyun Chul Lee *(KAERI),* Deokjung Lee *(UNIST)*

10:10 a.m.

Comparison of Cross-Section Models for Functionalization and History Effect, Yunzhao Li, Shengnan Gao, Hongchun Wu, Liangzhi Cao, Yaodong He *(Xi'an Jiaotong Univ)*

10:35 a.m.

Development of E_pGPT Surrogate Construction Capability within CRANE, Congjian Wang, Hany S. Abdel-Khalik *(Purdue Univ)*

Fuel Cycle Simulators

Sponsored by FCWMD

Session Organizer and Chair: Kathryn D. Huff *(Univ of California, Berkeley)*

Lone Star A: 1:00-3:05 p.m.

1:00 p.m.

Binary Formulation of Decay Equations, Anthony M. Scopatz, Paul P. H. Wilson *(Univ of Wisconsin, Madison),* Cameron R. Bates *(Univ of California, Berkeley)*

1:25 p.m.

Dynamic Resource Exchange Performance in Cyclus, Matthew J. Gidden, Paul P. H. Wilson *(Univ of Wisconsin, Madison)*

1:50 p.m.

Using Spatial Flux Calculations to Improve the Fluence-Based Neutron Balance Approach, Cem Bagdatlioglu, Erich Schneider, Robert Flanagan *(Univ of Texas, Austin)*

2:15 p.m.

Cymetric – A Fuel Cycle Metrics Tool for Cyclus, Anthony Scopatz, Arrielle Opotowsky, Paul P. H. Wilson *(Univ of Wisconsin, Madison)*

2:40 p.m.

Cyclus Graphical User Interface User Experience Testing, Robert Flanagan, Erich Schneider *(Univ of Texas, Austin)*

Modeling and Simulation

Sponsored by MSTD

Session Organizer: Kenneth J. Geelhood *(PNNL)*

Chair: Gokul Vasudevamurthy *(Virginia Commonwealth Univ)*

Lone Star B: 1:00-4:20 p.m.

1:00 p.m.

Overview of the BISON Fuel Performance Code, Kyle A. Gamble, Richard L. Williamson, Shane Stafford, Giovanni Pastore, Danielle M. Perez, Jason D. Hales, Stephen R. Novascone, Russell J. Gardner, Benjamin W. Spencer *(INL)*

1:25 p.m.

Thermal Neutron Scattering Cross Section of Beryllium Oxide, Iyad I. Al-Qasir *(Univ of Sharjah)*

1:50 p.m.

First-Principles Study of Iodine Diffusion in Silicon Carbide, Ruixuan Han, Yingying Li, Wei Xiao *(State Nuclear Power Research Institute)*

2:15 p.m.

Effect of Interfaces on Radiation Damage Accumulation in FeNiAl Maraging Steels, Benjamin Beeler *(Univ of California, Davis; Univ of California, Berkeley),* Mark Asta, Peter Hosemann *(Univ of California, Berkeley),* Niels Grønbech-Jensen *(Univ of California, Davis)*

2:40 p.m.

Magnesium Oxide: A Thermal Neutron Filter, Iyad I. Al-Qasir *(Univ of Sharjah)*

3:05 p.m.

HOGNOSE: A New Model for Corrosion in PWRs, Andrew Dykhuis, Michael P. Short *(MIT)*

3:30 p.m.

Analysis of Creep and Mass Relocation of U-Mo/Al Dispersion Fuel, Gwan Yoon Jeong *(UNIST),* Yeon Soo Kim *(ANL),* Dong-Seong Sohn *(UNIST)*

3:55 p.m.

A Concept for a Flexible Neutron Source, D. Wootan, K. Burns, R. Gates, G. Longoni, B. Schmitt *(PNNL)*

Thermal Hydraulics: General—II

Sponsored by THD

Session Organizer: Kurshad Muftuoglu *(GE Hitachi Nuclear)*

Cochairs: Donna P. Guillen *(INL),* Robert Martin *(Babcock & Wilcox Nuclear Energy, Inc.)*

Lone Star C: 1:00-2:40 p.m.

1:00 p.m.

Development, Validation, and Application of a Steam Generator Thermohydraulics Analysis Code STAF, Tenglong Cong *(Xi'an Jiaotong Univ; Univ of Wisconsin, Madison),* Rui Zhang, Wenxi Tian, Guanghui Su, Suizheng Qiu *(Xi'an Jiaotong Univ)*

1:25 p.m.

A Proposed Framework for an Integration of an Experimental Apparatus to a Computational Model of a Whole Nuclear Power Plant Model for Online Feedback, Zheng Fu, Josh C. Pack, Fatih Aydogan *(Univ of Idaho)*

1:50 p.m.

Assessment of Film Condensation Model of TRACE Code Using Reflux Condensation Test, Kyung Won Lee, Ae Ju Cheong, Andong Shin *(Korea Institute of Nuclear Safety)*

2:15 p.m.

Study of the Diodicity of a Coned Vortex Diode, Yin Cao, Yanhua Wu, Kun Chen *(Chinese Academy of Sciences)*

Small Modular Reactors (SMRs): Reactor Physics and Fuel Cycle

Sponsored by RPD; cosponsored by FCWMD

Session Organizer and Chair: Florent Heidet *(ANL)*

Lone Star D: 1:00-2:40 p.m.

1:00 p.m.

Core Design Studies for a BWR-Based Small Modular Reactor with Long-Life Core, Zeyun Wu, Won Sik Yang, Shanbin Shi, Manoru Ishii *(Purdue Univ)*

1:25 p.m.

Neutronics Simulation of Burnup-dependent Swelling of Metallic Fuel in a Linear Breed-and-Burn Fast Reactor (B&BR), Donny Hartanto, Yonghee Kim *(KAIST)*

1:50 p.m.

Study on Burning Strategy for Small-size Sodium-cooled Fast Reactor, Taewoo Tak, Deokjung Lee *(UNIST)*

2:15 p.m.

Once-Through Thorium Blanket Driven to Very High Burnup by Fast Reactor Excess Neutrons, Guanheng Zhang, Massimiliano Fratoni, Jasmina Vujic, Ehud Greenspan *(Univ of California, Berkeley)*

Data, Analysis, and Operations for Nuclear Criticality Safety

Sponsored by NCSD

Session Organizer: Allison D. Miller *(SNL)*

Chair: Jerry Hicks *(DOE)*

Lone Star E: 1:00-3:55p.m.

1:00 p.m.

Minimum Critical Mass of Heterogeneous Moderated Plutonium Metal Systems, A. R. Wysong, N. Glazener, R. E. Krentz-Wee, A. L. Salazar *(LANL)*

1:25 p.m.

Benchmark Specifications and Results for Fission Density and Neutron Importance in a HEU Metal System Using ORSphere, Margaret A. Marshall, John D. Bess *(INL)*

1:50 p.m.

Tungsten-Reflected Subcritical Measurements, J. Hutchinson, B. Richard, T. Cutler, A. Sood, M. Smith-Nelson *(LANL)*

2:15 p.m.

MCNP6 Optimization and Testing for Criticality Safety Calculations, Forrest B. Brown *(LANL)*

2:40 p.m.

Upper Subcritical Limit Calculations with Correlated Integral Experiments, Vladimir Sobes, Bradley T. Rearden, Don E. Mueller, William J. Marshall, John M. Scaglione, Michael E. Dunn *(ORNL)*

3:05 p.m.

Neutron Noise Measurements on HEU Foils Moderated by Lucite, J. Hutchinson, M. Smith-Nelson, A. Sood, R. Sanchez, D. Hayes, T. Cutler *(LANL),* A. Chapelle, P. Casoli *(CEA)*

3:30 p.m.

Impact of Nuclear Data Improvements on Criticality Safety Guidelines, Dustin Popp, Katherin Goluoglu, Sedat Goluoglu *(Univ of Florida)*

Are There Customers in the U.S. for Advanced Nuclear Reactors?–Panel

Sponsored by FCWMD

Session Organizer and Chair: Andrew G. Sowder *(EPRI)*

Lone Star F: 1:00-4:00 p.m.

With the current U.S. light-water reactor (LWR) fleet approaching retirement in the next 30 years, decisions for replacement will be made in the near future. While LWRs will remain the backbone of nuclear electricity generation for much of the 21st century, changing energy markets (e.g., shift of transportation fuel usage), increasing competition from other sources and paradigms (e.g., distributed generation), and resulting challenges for energy infrastructures (e.g., grid stability) may create new market opportunities for advanced nuclear reactor technologies. Panel participants will address prospects and conditions needed for commercial deployment of non-LWR technology by 2050 and beyond.

Panelists:

- Nick Irvin *(Southern Co.)*
- Everett Redmond *(NEI)*
- Kevan Weaver *(TerraPower)*
- John Mahoney *(NGNP Industry Alliance)*

Best of Radiation Protection and Shielding Division 2014—II

Sponsored by RPSD

Session Organizer: Thomas M. Miller *(ORNL)*

Chair: Hatice Akkurt *(EPRI)*

Presidio A: 1:00-3:05 p.m.

1:00 p.m.

Analysis of Shutdown Dose Rate in Fusion Energy Systems Using Hybrid Monte Carlo/Deterministic Techniques, Ahmad M. Ibrahim, Douglas E. Peplow, Joshua L. Peterson, Robert E. Grove *(ORNL),* invited

1:25 p.m.

Radiation Mapping at JET and ITER Using Advanced Computational Acceleration Techniques and Tools, Jonathan Naish, Frances Fox, Zamir Ghani *(Culham Centre for Fusion Energy),* Michael Loughlin *(ITER),* Lee Packer, Andrew Turner *(Culham Centre for Fusion Energy)*

1:50 p.m.

Rigorous Two-Step Activation for Fusion Systems with PyNE, Elliott Biondo, Andrew Davis, Anthony Scopatz, Paul P. H. Wilson *(Univ of Wisconsin, Madison)*

2:15 p.m.

Activation Neutronics for a Swiss PWR and a Swiss BWR, Manuel Pantelias, Valentyn Bykov, Benjamin Volmert *(NAGRA)*, invited

2:40 p.m.

Experiment Design for Secondary Particles Measurement of Helium Ions Bombarding Stopping Targets, Pi-En Tsai, Lawrence H. Heilbronn *(Univ of Tennessee)*

New Nuclear Construction Around the World—Status Report–Panel

Sponsored by OPD

Session Organizer: Edward L. Quinn *(Technology Resources)*

Cochairs: Corey K. McDaniel *(RSCC Nuclear Wire & Cable)*, Mimi Limbach *(Potomac Communications Group)*

Presidio B: 1:00-4:00 p.m.

This panel provides the latest information on the status and progress in new nuclear construction around the world including government, regulatory, owner-operator, and vendor input. Speakers address the latest in key issues that have an impact on the selection of new designs and the status of construction activities.

Panelists:

- Poong Hyun Seong *(KAIST/Korean Nuclear Society)*
- Fiona Rayment *(UK National Nuclear Laboratory)*
- Wei Wu Chao *(Taiwan Atomic Energy Council)*
- Frank Akstulewicz *(NRC)*

Nexus Between Safety and Cyber Security–Panel

Sponsored by NISD; cosponsored by HFICD

Session Organizer and Chair: Mitch McCrory *(SNL)*

Presidio C: 1:00-4:00 p.m.

What is "cyber security" and what can be accomplished through cyber methods? This session will convene a panel to discuss cyber security, its relationship to safety and physical effects from cyber attacks, and how a cyber red team views a cyber system. Experts from the National Laboratories, Government, and Industry will form the panel to explore these topics.

Panelists:

- Joe Rivers *(NRC-NSIR)*
- Matt Gibson *(EPRI)*
- Bob Hutchinson *(SNL)*
- Brad Yeates *(SNOC)*

Isotopes and Radiation: General

Sponsored by IRD

Session Organizer: Kenan Unlu *(Penn State)*

Chair: Brenden J. Heidrich *(INL)*

Crockett A/B: 1:00-2:40 p.m.

1:00 p.m.

High-Flux Accelerator-Based Neutron Source as a ^{252}Cf Alternative, Ross Radel, Greg Piefer, Chris Seyfert, Arne Kobernik, Logan Campbell, Casey Lamers, Tye Gribb, Evan Sengbusch *(Phoenix Nuclear Labs)*

1:25 p.m.

New Directions in Source Recoveries by OSRP at LANL, Ioana Witkowski, Anthony Nettleton, Alex Feldman *(LANL)*

1:50 p.m.

Evaluating the Feasibility of a Simple Experiment to Validate the Existence of a Low-Energy Component to the ^{40}Ca(n,a)^{37}Ar Reaction Cross-Section, William H. Wilson, Steven R. Biegalski *(Univ of Texas, Austin)*

2:15 p.m.

Validation and Uncertainty of DRF's for a 1" X 2" NaI Collimated Detector for Radioisotope Holdup Measurements, N. Nelson, Y. Azmy, R. P. Gardner, J. Mattingly, R. Smith *(NCSU)*, L. G. Worrall, S. Dewji *(ORNL)*

Innovations in Radiation Detectors: New Designs, Improvements, and Applications

Sponsored by IRD

Session Organizer: Igor Jovanovic *(Penn State)*

Chair: Steven R. Biegalski *(Univ of Texas at Austin)*

Crockett A/B: 2:45-4:25 p.m.

2:45 p.m.

Data Driven Modeling of Radiation Background using an Ensemble of Learning Methods: Initial Concepts and Preliminary Results, Miltiadis Alamaniotis, Chan K. Choi, Lefteri H. Tsoukalas *(Purdue Univ)*

3:10 p.m.

Development of an Active Imagining Method for Examining Environmental Samples in Nuclear Safeguards, Michael Kurth, Richard Shawger, Danyal Turkoglu *(Ohio State Univ),* Sam Glover, Henry Spitz *(Univ of Cincinnati),* Lei R. Cao *(Ohio State Univ)*

3:35 p.m.

A Quick Method to Estimate the Birks Factor for Various Scintillators, Zheng Chang *(SCSU)*

4:00 p.m.

A New Approach in Gamma Ray Spectra Analysis: Automated Integration of Peak Detection and Spectrum Fitting using Fuzzy Logic and Multiple Linear Regression, Miltiadis Alamaniotis, Chan K. Choi, Lefteri H. Tsoukalas *(Purdue Univ)*

NOTE: This session will immediately follow the preceding session, which will begin at 1:00 p.m.

Reactor Physics: General—I

Sponsored by RPD

Session Organizer: Alexander Stanculescu *(INL)*

Chair: G. Ivan Maldonado *(Univ of Tennessee)*

Crockett C/D: 1:00-2:40 p.m.

1:00 p.m.

Validation of the MAPTA Reactivity Monitoring Technique using a Boiling Water Reactor Turbine Trip Benchmark, Marta Nervo, Sandra Dulla, Piero Ravetto *(Politecnico di Torino)*

1:25 p.m.

Comparative Study on Neutronics Characteristics of 1000 MWth Metal Fuel Sodium-cooled Fast Reactor, N. E. Stauff *(ANL),* M. M. Uematsu *(JAEA),* T. K. Kim *(ANL)*

1:50 p.m.

A Mixed Spectrum Nuclear Reactor Controlled by Moderator Displacement, Neal L. Mann *(Consultant)*

2:15 p.m.

A Comprehensive Validation Approach Using the RAVEN Code, Ivan Rinaldi *(Univ of Rome),* Andrea Alfonsi, Joshua Cogliatti, Cristian Rabiti *(INL),* Fabio Giannetti, Gianfranco Caruso *(Univ of Rome)*

Recycle and Reuse of Used Nuclear Fuel Resources

Sponsored by FCWMD

Session Organizer and Chair: Guillermo Daniel DelCul *(ORNL)*

Lone Star A: 4:00-5:40 p.m.

4:00 p.m.

Feasibility Study for Select Isotope Recovery from La Hague, Sven Bader *(AREVA)*

4:25 p.m.

In-situ Quantitative Analysis for Mixed Nd-Pr-Sm Lanthanides in LiCl-KCl Molten Eutectic Using Spectroscopic Techniques, Young Taek Jee *(KAIST),* Bong Young Kim *(KAERI),* Jong-Il Yun *(KAIST)*

4:50 p.m.

Development of a Separation Process for Spent Fuel Containing Polymers, Olivier Fiquet, Aziza Chairat, Alexandre Ghionzoli *(CEA)*

5:15 p.m.

Removal of Cs Ions from Aqueous Solution by Titanate Nanomaterials, Jing Fu, Dejun Liu, Peng Zhan, Tian Luo *(State Nuclear Power Research Institute)*

Nuclear Nonproliferation Policy: General

Sponsored by NNPD; cosponsored by FCWMD, IRD, NISD, RPSD, YMG

Session Organizer: Ross Christophe Robinson *(Babcock & Wilcox Y-12)*

Chair: Lloyd J. Jollay *(Babcock & Wilcox Y-12)*

Lone Star D: 4:00-5:15 p.m.

4:00 p.m.

Nuclear Forensics: Calculation and Determining the Radioactive Sample: Kingdom of Saudi Arabia as Special Case, Salah Ud-Din Khan *(King Saud Univ),* Shahab Ud-Din Khan *(Chinese Academy of Sciences)*

4:25 p.m.

A Comparison of Activation Products in Different Types of Urban Nuclear Melt Glass, Joshua Molgaard *(U.S. Military Academy),* John D. Auxier II, Howard L. Hall *(Univ of Tennessee)*

4:50 p.m.

Monte Carlo Simulations of Cosmic Ray Muons for Dry Cask Monitoring, S. Chatzidakis, P. T. Forsberg, B. T. Sims, L. H. Tsoukalas *(Purdue Univ)*

Decommissioning and Environmental Sciences: General

Sponsored by DESD

Chair: Nadia S. Glucksberg *(Haley & Aldrich, Inc.)*

Lone Star F: 4:00-5:40 p.m.

4:00 p.m.

Remediation of an Atomic Testing Era Laboratory, Dustin G. Miller *(JG Management Systems)*

4:25 p.m.

Phenix Nuclear Power Plant Dismantling Start, F. Dominjon, J. P. Grandjean, F. Laurent *(CEA)*

4:50 p.m.

Decommissioning of Units 1 to 4 at Kozloduy Nuclear Power Plant: Current Activities and Challenges, Denitsa Dishkova *(Representative of State Enterprise "Radioactive Waste"–Bulgaria),* invited

5:15 p.m.

Concurrent Assessment of Exposure to Workers in Virtual Decommissioning Environments, KwanSeong Jeong, ByungSeon Choi, JeiKwon Moon, Dongjun Hyun, Jonghwan Lee, IkJune Kim, GeunHo Kim *(KAERI)*

Fusion Energy: General

Sponsored by FED

Session Organizer: Lee Cadwallader *(INL)*

Chair: Susana Reyes *(LLNL)*

Presidio A: 4:00-5:40 p.m.

4:00 p.m.

Plasma Current Stability Code (PCSC) Based on the Coupling Analysis of EMF-Eddy Current-Plasma Control, Shahab Ud-Din Khan, Yuntao Song *(Chinese Academy of Sciences),* Salah Ud-Din Khan *(King Saud Univ)*

4:25 p.m.

Review of the Industrial Isotope Production in First Colliding-Beam Fusion Breeder Reactor Operating Well Above "Critical Energy", Bogdan C. Maglich, Dan W. Scott, Tim Hester, James Nering *(CALSEC)*

4:50 p.m.

Extreme Learning Machine Method Based Optimization of Ta Content in CLAM Steel, Longfeng Shen, Liqin Hu *(Univ of Science and Technology of China, Chinese Academy of Sciences),* Xiangwei Zhai *(Chinese Academy of Sciences)*

5:15 p.m.

A Hydrogen Sensor for Liquid-Metal Breeding Blankets, Iuri Nicolotti *(DENERG),* Marco Utili *(ENEA UTIS),* Lugi Candido, Massimo Zucchetti *(DENERG)*

Transient Testing of Nuclear Fuels at TREAT and Other Associated Topics—I

Sponsored by MSTD

Session Organizer and Chair: Heng Ban *(Utah State Univ)*

Presidio B: 4:00-6:30 p.m.

4:00 p.m.

Transient Testing Scientific Infrastructure Development to Support TREAT, Daniel M. Wachs *(INL)*

4:25 p.m.

Status of the TREAT Reactor Restart and the Resumption of Transient Testing, John Bumgardner *(INL)*

4:50 p.m.

Transient Testing of Nuclear Fuels in TREAT: An Overview, Arthur E. Wright *(ANL)*

5:15 p.m.

ATF-3: An Overview of the Accident Tolerant Fuels Transient Testing Campaign in the TREAT Reactor, R. C. O'Brien, Daniel M. Wachs, A. A. Beasley *(INL)*

5:40 p.m.

Development of Multi-Physics Methods to Support Restart of the Transient Test Reactor, Frederick N. Gleicher, Mark D. DeHart, Javier Ortensi, Yaqi Wang *(INL),* Anthony L. Alberti, Todd S. Palmer *(Oregon State Univ)*

6:05 p.m.

Temperature Dependence of Test Fuel Power Density and Core Energy during Transient Reactor Test Facility (TREAT) Irradiation Experiments, Dimitrios C. Kontogeorgakos, Heather M. Connaway, Arthur E. Wright *(ANL)*

Accelerator Applications: General

Sponsored by AAD

Session Organizer: Erich A. Schneider *(Univ of Texas, Austin)*

Chair: Blair P. Bromley *(Canadian Nuclear Society)*

Presidio C: 4:00-4:50 p.m.

4:00 p.m.

Dynamic System Simulation of Fissile Solution Systems, Christy M. Day, Steven K. Klein *(LANL)*

4:25 p.m.

Colloid Rates of Radionuclides in Cooling Water of the 120-GeV Proton Accelerator Facilities at Fermilab, U.S.A., Hiroshi Matsumura *(KEK),* Shun Sekimoto *(Kyoto Univ),* JASMIN Collaborators *(KEK, Kyoto Univ, JAEA, Fermilab, Shimizu Corp.)*

Reactor Physics Design, Validation, and Operating Experience—II

Sponsored by RPD

Session Organizer: Alexander Stanculescu *(INL)*

Chair: Cristian Rabiti *(INL)*

Crockett D: 4:00-5:40 p.m.

4:00 p.m.

Performance Evaluation of Alternative Reflector Materials for PWRs, Jiwon Choe, Deokjung Lee *(UNIST),* Ho Cheol Shin *(KHNP-CRI)*

4:25 p.m.

New Ring Type Burnable Absorber for PWRs, Jiwon Choe, Deokjung Lee *(UNIST),* Ho Cheol Shin *(KHNP-CRI)*

4:50 p.m.

Improvement and Verification of Reloading Optimization Program CSA for Actual Nuclear Power Plant, Zhihong Liu, Jing Zhao *(Tsinghua Univ),* Xiuan Shi *(China Nuclear Power Technology Research Institute)*

5:15 p.m.

Physics-guided Covered Mapping: A New Approach for Quantifying Experimental Coverage and Bias Scaling, Hany S. Abdel-Khalik *(Purdue Univ),* Ayman I. Hawari *(NCSU),* Congjian Wang *(Purdue Univ)*

Cyclus Users–Tutorial

Sponsored by FCWMD

Session Organizer: Paul P. Wilson *(Univ of Wisconsin, Madison)*

Chair: Matthew Gidden *(Univ of Wisconsin, Madison)*

Lone Star A: 8:30-11:30 a.m.

Cyclus is an advanced and flexible fuel cycle simulator capable of modeling the long-term impacts of different nuclear fuel cycle options. Cyclus allows users to arrange models of individual fuel cycle facilities into innovative fuel cycle configurations. Cyclus and its graphical interfaces are freely available. This tutorial will explore the fundamental concepts of Cyclus and guide participants through the process of designing and analyzing a typical nuclear fuel cycle.

Participants should bring a laptop computer for the installation of Cyclus. Participants are also advised to install Cyclus prior to the tutorial by visiting www.fuelcycle.org for instructions.

Hybrid Energy: Combining Nuclear and Other Energy Sources

Sponsored by FCWMD

Session Organizer: Charles W. Forsberg *(MIT)*

Chair: Jean-Francois Lucchini *(LANL)*

Lone Star B: 8:30-11:00 a.m.

8:30 a.m.

Zero-Greenhouse-Gas Hydrocarbon Liquid Fuels Production, Charles Forsberg *(MIT)*

8:55 a.m.

Overview of U.S. DOE Research and Development of Nuclear-Renewable Hybrid Energy Systems, Shannon M. Bragg-Sitton, Richard Boardman *(INL)*

9:20 a.m.

Improving Nuclear System Economics using Firebrick Resistance-Heated Energy Storage (FIRES), Daniel C. Stack, Charles Forsberg *(MIT)*

9:45 a.m.

Nuclear-Renewable Hybrid Energy System for Reverse Osmosis Desalination Process, Jong Suk Kim, Humberto E. Garcia *(INL)*

10:10 a.m.

Thermoeconomic Analysis for Nuclear-Renewable Hybrid Energy System with Hydrogen Production, Lauren Boldon *(RPI),* Piyush Sabharwall, Cristian Rabiti, Shannon M. Bragg-Sitton *(INL),* Li Liu *(RPI)*

10:35 a.m.

Nuclear Renewable Oil Shale System Development Pathway, Daniel Curtis, Charles Forsberg *(MIT)*

Computational Thermal Hydraulics—I

Sponsored by THD

Session Organizer: Bao-Wen Yang *(Xian Jiaotong Univ)*

Cochairs: Bao-Wen Yang *(Xian Jiaotong Univ),* Rui Hu *(ANL)*

Lone Star C: 8:30-11:25 a.m.

8:30 a.m.

Heat Transfer during Natural Convection between Two Rough Horizontal Parallel Plates, M. Yousaf, S. Usman *(Missouri Univ of Science and Technology)*

8:55 a.m.

Wire-Wrapped Fuel Rod Mesh Sensitivity Study, L. M. Brockmeyer, F. S. Sarikurt, Y. A. Hassan *(TAMU)*

9:20 a.m.

Thermal-Hydraulic Design Features of Transportable Fluoride-salt-cooled High-temperature Reactor, Chenglong Wang, Kaichao Sun, Lin-wen Hu, Suizheng Qiu, Dalin Zhang, Guanghui Su *(MIT)*

9:45 a.m.

Development of a CFD Modeling for Pressure Drop Estimation of Molten Salts in a Crossflow Tube Bundle, L. B. Carasik, Y. A. Hassan, J. W. Clayton *(TAMU)*

10:10 a.m.

Direct Numerical Simulation of Turbulent Flow in the Neat Wall Region of a Pebble Bed, L. H. Fick *(TAMU),* E. Merzari *(ANL),* Y. A. Hassan *(TAMU)*

10:35 a.m.

Numerical Simulation of Flow and Turbulent Mixing in a T-Junction Using LES and WALE Models, Mohammed Hasan, Kaushik Das, Debashis Basu *(Southwest Research Institute)*

11:00 a.m.

Numerical Simulations for Effects of Pipe Size on Countercurrent Flow Limitation in Slightly Inclined Pipes, Michio Murase, Yoichi Utanohara, Takayoshi Kusunoki *(Institute of Nuclear Safety System, Inc.),* Dirk Lucas *(Helmholtz-Zentrum Dresden-Rossendorf),* Akio Tomiyama *(Kobe Univ)*

Mathematical Modeling and Uncertainty Quantification

Sponsored by MCD

Session Organizer: Ryan G. McClarren *(Texas A&M)*

Chair: Steven P. Hamilton *(ORNL)*

Lone Star D: 8:30-10:35 a.m.

8:30 a.m.

A Backtracking Analysis Approach for Diagnostic Applications of Markov/CCMT, Jun Yang, Tunc Aldemir *(Ohio State Univ)*

8:55 a.m.

Computational Evaluation of Station Blackout, Jack Cavaluzzi, Paul Nelson, Vera Moiseytseva *(TAMU)*

9:20 a.m.

A Novel Coupled Computation Method for Fast Burst Reactors, Wenfeng Liang, Qilin Xie, Dong Qiu *(China Academy of Engineering Physics)*

9:45 a.m.

Contribution of Probabilistic Approaches for the Calibration of a Fission Gas Release Model, Antoine Bouloré, Jean-Marc Martinez, Fabrice Gaudier, Christine Struzik *(CEA)*

10:10 a.m.

Development of Multi-Level Reduced Order Modeling Methodology, Mohammad G. Abdo, Hany S. Abdel-Khalik *(Purdue Univ)*

Education and Training: General

Sponsored by ETWDD

Session Organizer: John S. Bennion *(GE Hitachi Nuclear)*

Chair: Lisa M. Marshall *(NCSU)*

Lone Star E: 8:30-9:45 a.m.

8:30 a.m.

A Course on Condensed Matter Nuclear Science, George Miley *(Univ of Illinois, Urbana-Champaign)*

8:55 a.m.

3D Virtual Research Reactor in Oculus Rift with LEAP Interactivity, Yoshinori Satoh *(Univ of Illinois, Urbana-Champaign, Toshiba Co.),* Rizwan-uddin *(Univ of Illinois, Urbana-Champaign)*

9:20 a.m.

Distance Education of Reactor Laboratory at Missouri S&T, M. Yousaf, T. Akyurek, A. Alajo, S. Usman *(Missouri Univ of Science and Technology*

Transient Testing of Nuclear Fuels at TREAT and Other Associated Topics—II

Sponsored by MSTD

Session Organizer and Chair: Heng Ban *(Utah State Univ)*

Lone Star F: 8:30-10:35 a.m.

8:30 a.m.

TREAT Experiment Vehicle Design and Future Plans, Nicolas Woolstenhulme, C. C. Baker, John D. Bess, Cliff Davis, G. K. Housley, Colby Jensen, R. C. O'Brien, S. D. Snow *(INL)*

8:55 a.m.

Thermal Analysis of TREAT Experimental Devices, Colby Jensen, Cliff Davis, Nicolas Woolstenhulme *(INL)*

9:20 a.m.

TREAT Fuel Assembly Characterization for Modern Neutronics Validation Methods, John D. Bess, Mark D. DeHart *(INL)*

9:45 a.m.

The TREAT Fast-Neutron Hodoscope and Plans for Restoring it to Operation, D. L. Chichester, S. M. Watson, J. T. Johnson, Daniel M. Wachs *(INL)*

10:10 a.m.

Burst Behavior of Fe-Based Alloy Cladding under LOCA Conditions, Caleb Massey *(ORNL, VCU),* Kurt Terrani, Bruce Pint, Sebastien Dryepondt *(ORNL)*

Radiation Protection and Shielding–Roundtable

Sponsored by RPSD

Session Organizer: Peter F. Caracappa *(RPI)*

Chair: Ahmad Ibrahim *(ORNL)*

Presidio A: 8:30-11:30 a.m.

Everyone is invited to give a short presentation on any radiation protection and shielding topic of interest. Ten-minute time slots will be allotted on a first-come/first-serve basis. This session is meant to be fast, informal, and fun.

Operations and Power: General

Sponsored by OPD

Session Organizer: Gale Hauck *(Westinghouse)*

Chair: Piyush Sabharwall *(INL)*

Presidio B: 8:30-11:25 a.m.

8:30 a.m.

Study of the Parameters that Influence Small Modular Reactor Investment Costs, Lauren Boldon *(RPI),* Piyush Sabharwall *(INL),* Erich Schneider *(Univ of Texas, Austin),* Li Liu *(RPI)*

8:55 a.m.

The Effect of PWR Size on Reactivity and Power Distribution During Reactivity Initiated Accidents, R. Busquim e Silva, A. L. F. Marques, J. J. Cruz *(Univ of Sao Paulo),* K. Shirvan, M. S. Kazimi *(MIT)*

9:20 a.m.

End-of-Cycle Reactor Coolant Zinc Disappearance at Davis-Besse, John M. Riddle, Larry S. Lamanna *(AREVA),* Vincent N. Capozziello *(FENOC)*

9:45 a.m.

Effects of Manual Operation during a Loss-of-Coolant Accident with Pump Unavailability, Timothy Crook, Rodolfo Vaghetto, Yassin A. Hassan *(TAMU)*

10:10 a.m.

Improving Grid Reliability Using Salt-Cooled Reactors with Air Brayton Power Cycles and Heat Storage, Charles Forsberg *(MIT)*

10:35 a.m.

Method for Fast-Filling Fuel-Buffering System with Helium in a Pebble-bed Reactor, Hongbing Liu, Dong Du *(Tsinghua Univ, Key Laboratory for Advanced Materials Processing Technology),* Peng Shen *(Henan Energy and Chemical Industry Group Co.)*

11:00 a.m.

Development of a Fluoride-Salt-Cooled High-Temperature Reactor (FHR) Using Advanced Gas-Cooled Reactor (AGR) Technology, Charles Forsberg, Joshua Richard *(MIT),* Justin Pounders *(Univ of Mass-Lowell),* Rich Kochendarfer, Kim Stein *(AREVA),* Eugene Shwageraus, Geoff Parks *(Cambridge Univ)*

Human Factors, Instrumentation, and Controls: General—I

Sponsored by HFICD

Session Organizer: Sacit M. Cetiner *(ORNL)*

Chair: Raymond Herb *(Southern Nuclear)*

Presidio C: 8:30-10:35 a.m.

8:30 a.m.

A Study on a Framework to Evaluate Operating Support Systems in NPPs, Moon Kyoung Choi, Poong Hyun Seong *(KAIST)*

8:55 a.m.

Method for Detecting Stuck Fuel Element in a Pebble-bed Reactor, Hongbing Liu, Dong Du *(Tsinghua Univ, Key Laboratory for Advanced Materials Processing Technology),* Peng Shen *(Henan Energy and Chemical Industry Group Co.)*

9:20 a.m.

Detection of Fuel-Elements for the Fuel-Handling System in a High Temperature Gas-Cooled Pebble Bed Reactor, Ayada He, Hongbing Liu, Dong Du *(Tsinghua Univ, Key Laboratory for Advanced Materials Processing Technology)*

9:45 a.m.

An Application of Functional Modeling to the Prediction for Abnormal Conditions of Safety Critical Component in Standby State in Nuclear Power Plants, Young Gyu No, Seung Geun Kim, Poong Hyun Seong *(KAIST)*

10:10 a.m.

Model-Based Software Development Process with CASE Tool for NPP Safety Systems, Chang Ho Kim, Joo Hyun Cho, Se Do Sohn, Seung Min Baek *(KEPCO E&C)*

LWR Fuel Reliability–Panel

Sponsored by RPD

Session Organizer and Chair: Moussa Mahgerefteh *(Exelon)*

Crockett A/B: 8:30-11:30 a.m.

One of the biggest fuel reliability issues in LWR operating plants today is channel distortion and fuel failure due to breach of the cladding. Major contributors to cladding failure are grid-to-rod fretting due to flow induced vibration and debris fretting due to foreign material intrusion into the primary system. This session explores various design features to reduce fuel failures during operation due to mechanical interaction. The session focuses on design features such as failure resistant cladding materials, coatings that protect the cladding in the spacer grid region, spacer grid designs that do not capture foreign materials, and new channel material and design strategies to mitigate channel distortion.

Panelists:

- Arthur Motta *(Penn State Univ)*
- Erik Mader *(EPRI)*
- Zeses Karoutas *(Westinghouse)*
- Tom Morello *(Exelon)*
- Brian Friend *(AREVA)*
- David Hoppes *(South Texas Nuclear Project)*
- Kevin Ledford *(GNF)*

Reactor Analysis Methods—II

Sponsored by RPD

Session Organizer: Alexander Stanculescu *(INL)*

Chair: Eleodor M. Nichita *(Univ of Ontario Inst of Tech)*

Crockett C/D: 8:30-10:35 a.m.

8:30 a.m.

Development of MHI FBR Nuclear Design Code System CALAXY-H/ENSEMBLE-TRIZ, Kazuki Kirimura, Yohei Kamiyama, Kazuya Yamaji, Shinya Kosaka, Hideki Matsumoto *(Mitsubishi Heavy Industries)*, Akio Yamamoto *(Nagoya Univ)*

8:55 a.m.

Angular Dependent Transmission Probability Method for Fast Reactor Core Transport Analysis, Akio Yamamoto *(Nagoya Univ)*, Kazuki Kirimura, Yohei Kamiyama, Kazuya Yamaji, Shinya Kosaka, Hideki Matsumoto *(Mitsubishi Heavy Industries)*

9:20 a.m.

Uncertainty Quantification of Delayed Neutron Fraction of U235 Based Fuel Cores, Gérald Rimpault, David Blanchet, Jean Tommasi, Guillaume Truchet *(CEA)*

9:45 a.m.

Advanced Equilibrium Composition Search Method for Molten Salt Breeder Reactor Based on Two-Cell Model, Yongjun Jeong, Jinsu Park, Deokjung Lee *(UNIST)*

10:10 a.m.

Pin Power Reconstruction for PHWR Reactors Using Leakage-Corrected Discontinuity Factors, Eleodor Nichita, Elif Usalp *(Univ of Ontario Institute of Technology)*

Cyclus Archetype Developers–Tutorial

Sponsored by FCWMD

Session Organizer: Paul P. Wilson *(Univ of Wisconsin, Madison)*

Chair: Matthew Gidden *(Univ of Wisconsin, Madison)*

Lone Star A: 1:00-4:00 p.m.

Cyclus is an advanced and flexible fuel cycle simulator capable of modeling the long-term impacts of different nuclear fuel cycle options.

The tutorial will demonstrate how developers can integrate their archetype with the graphical user interface for both scenario definition and output exploration and describe how to distribute new archetypes as part of the Cyclus community. Cyclus, its graphical user interfaces, and its development tools are all freely available for users and developers. Participants should bring a laptop computer for the installation of Cyclus. Participants are also advised to install Cyclus prior to the tutorial by visiting www.fuelcycle.org for instructions.

Fuel Cycle and Waste Management: General—I

Sponsored by FCWMD

Session Organizer: Jean-Francois Lucchini *(LANL)*

Chair: Jinsuo Zhang *(Ohio State Univ)*

Lone Star B: 1:00-3:05 p.m.

1:00 p.m.

Moving from Closed to Open Fuel Cycle within the UK while Keeping Future Fuel Cycle Options Open, Fiona Rayment, Tim Tinsley, Robin Taylor, Robert Gregg *(NNL)*

1:25 p.m.

Developments in Fuel Fabrication R&D within the UK, Daniel Mathers, Richard Stainsby, Emma Johnston, David Goddard *(NNL)*

1:50 p.m.

Remote Area Modular Monitoring (RAMM) for Nuclear and Radiological Facilities, Hanchung Tsai, Brian Craig, Yung Y. Liu, James Shuler *(ANL)*

2:15 p.m.

Parametric Analysis and Optimization using Multivariate Regression Analysis and Genetic Algorithms, Akansha Kumar, Pavel Tsvetkov *(TAMU)*

2:40 p.m.

Evaluation of Eu Sorption onto TiO_2 Impurities in Natural Systems, Dejun Liu, Peng Zhan, Jing Fu, Tian Luo *(State Nuclear Power Research Institute)*

Computational Thermal Hydraulics—II

Sponsored by THD

Session Organizer: Donna P. Guillen *(INL)*

Cochairs: Piyush Sabharwall *(INL)*, Si Young Lee *(SRNL)*

Lone Star C: 1:00-3:30 p.m.

1:00 p.m.

Numerical Verification of RELAP-7 Model for a Single Phase Natural Circulation Loop, Haihua Zhao, Ling Zou, Hongbin Zhang, Richard Martineau *(INL)*

1:25 p.m.

Core Degradation Research and the Simulation of PHEBUS FPT-1, Jun Wang *(Univ of Wisconsin, Madison, Xi'an Jiaotong Univ)*, Michael L. Corradini, Troy Haskin *(Univ of Wisconsin, Madison)*

1:50 p.m.

Solving Two-Phase Flow Transport Equations Using the Lax-Wendroff Scheme, Dean Wang *(Univ of Mass-Lowell)*

2:15 p.m.

Analysis of Two Phase Natural Circulation Flow under IVR-ERVC using RELAP5/MOD3, Rae-Joon Park, Kwang-Soon Ha, Hwan-Yeol Kim *(KAERI)*

2:40 p.m.

Newton-Krylov Methods in Applications of Two-Phase Flow Problems with Phase Appearance/Disappearance, Ling Zou, Haihua Zhao, Hongbin Zhang *(INL)*

3:05 p.m.

Analysis of Two Phase Natural Circulation Flow in Core Catcher using RELAP5/MOD3, Rae-Joon Park, Kwang-Soon Ha, Hwan-Yeol Kim *(KAERI)*

Nuclear Fission Processes and Data–Panel

Sponsored by NCSD, All invited.

Session Organizer and Chair: Katherin L. Goluoglu *(Univ of Florida)*

Lone Star D: 1:00-4:00 p.m.

Since fission was first discovered, there have been many advances in our knowledge of the fission process and nuclear data. This session is devoted to recent advances in nuclear fission theory and the experiments performed to advance this knowledge. This includes discussion on data fission cross-sections, fission fragment yields, prompt fission neutrons and photons, the evaluation of nuclear data, and their use in Monte Carlo transport simulations.

Panelists:

- Robert Haight *(LANL)*
- Forrest Brown *(LANL)*
- Fredrik Tovesson *(LANL)*
- Michael Rising *(LANL)*

Transient Testing of Nuclear Fuels at TREAT and Other Associated Topics—III–Panel

Sponsored by MSTD

Session Organizer and Chair: Heng Ban *(Utah State Univ)*

Lone Star F: 1:00-4:00 p.m.

Panelists:

- The Characteristics of the CABRI Reactor for RIA Testing and the CABRI International Program (CIP), Marc Petit *(IRSN)*
- The IRSN Perspective on PWR Fuel Behavior under RIA Conditions: Current Understanding and Remaining Issues, Marc Petit *(IRSN)*
- Instrumentation and Measurement for Transient Test Reactor (TREAT) Experiments, Heng Ban *(Utah State Univ)*
- IRP Instrumentation, Mike Corradini *(Univ of Wisconsin)*
- Building Academic Interest in Transient Testing, Andrew Klein *(Oregon State Univ)*
- A DOE panelist to be announced.

ATTILA for MCNP–Tutorial

Sponsored by RPSD

Session Organizer and Chair: Peter F. Caracappa *(RPI)*

Presidio A : 1:00-4:00 p.m.

This tutorial provides an introduction to the use of ATTILA to interface with the unstructured mesh capability in MCNP6. We will address how to import CAD geometries into ATTILA, mesh the geometry, setup the entire MCNP6 input file within the GUI, and run the calculation using the MCNP6 unstructured mesh capability. We will also discuss how to run the ATTILA solver to generate weight windows with the CADIS methodology.

Human Factors, Instrumentation, and Controls: General—II

Sponsored by HFICD

Session Organizer: Sacit M. Cetiner *(ORNL)*

Chair: Steven A. Arndt *(NRC)*

Presidio C : 1:00-2:40 p.m.

1:00 p.m.

Field Programmable Gate Array-based I&C Protection System Design, Hyun-Jeong Kim, In-Seok Hwang, Seung Min Baek *(KEPCO E&C)*

1:25 p.m.

Calculation of Fault Detection Coverage for Digital I&C Systems, Jaehyun Cho, Seung Jun Lee, Wondea Jung *(KAERI)*

1:50 p.m.

High Spatial Resolution Reactor Power Reconstruction from External Core Distributed Measurement, Charles Stratton, Pavel Tsvetkov *(TAMU)*

2:15 p.m.

Control Strategy Development of Advanced High Temperature Reactor System, I. Skavdahl, V. Utgikar *(Univ of Idaho)*, Piyush Sabharwall *(INL)*, M. Chen, X. Sun, R. N. Christensen *(Ohio State Univ)*

Current Issues in LWR Core Design and Reactor Engineering Support–Panel

Sponsored by RPD

Session Organizer and Chair: Moussa Mahgerefteh *(Exelon)*

Crockett A/B: 1:00-4:00 p.m.

This will be a panel session with members invited from utilities and/or fuel vendors. The focus of the presentations will be to share current core design capabilities, developments, and methods for addressing issues impacting core designs and associated reactor engineering support activities. Particular issues may include recent operating experiences, reactivity management, poison management, reduced notch worth for startup, power maneuver strategies and tools, fuel performance (cladding failures, crud-induced power shift, distinctive crud pattern), impact of primary chemistry, spent fuel disposal and ISFSI, refueling outage length, cycle length, fuel cycle cost, life extension, power uprate, and new fuel designs.

Panelists:

- Dale Bradish *(Exelon)*
- David Brown *(TVA)*
- Mark Eckenrode *(AREVA)*
- Mathew Eyre *(Eyre NEC)*
- Fausto Franceschini *(Westinghouse)*
- David Orr *(Duke Energy)*

Reactor Physics: General—II

Sponsored by RPD

Session Organizer: Alexander Stanculescu *(INL)*

Chair: Mark D. DeHart *(INL)*

Crockett C/D: 1:00-2:40 p.m.

1:00 p.m.

Feasibility of Colliding Beam Fusion-Catalyzed Fast Fission Chain Reactor with Direct Conversion of Energy of Fission Fragments into Electricity and Suppressed Plutonium Production, Bogdan C. Maglich *(CALSECO)*

1:25 p.m.

Improved Reactivity Estimation of MC²-3/DIF3D for Fast Reactor Analysis, Changho Lee, Nicolas E. Stauff *(ANL)*

1:50 p.m.

A Novel Compact Core Design for Beam Tube Research Reactors, Zeyun Wu (NIST, Univ of Maryland), Max Carlson *(MIT),* Robert E. Williams, Sean O'Kelly, J. Michael Rowe *(NIST)*

2:15 p.m.

Nuclear-Thermal Analysis of Coated Particle Dispersed Plate-Fuel Loaded in a Novel Research Reactor, Yoonhee Lee, Yonghee Kim, Nam Zin Cho *(KAIST)*

Fuel Cycle and Waste Management: General—II

Sponsored by FCWMD

Session Organizer and Chair: Jean-Francois Lucchini *(LANL)*

Lone Star B: 8:30-11:00 a.m.

8:30 a.m.

Storage of TMI-2 and Other Damaged Fuels at the Idaho Nuclear Technology and Engineering Center, Mark Argyle, Allan Carlson, Allan Christensen, Randy Fadeley, Greg Hall, James Stalnaker *(CH2M-Washington Group Idaho)*

8:55 a.m.

An Optimization Methodology in Nuclear Reactor Design using Genetic Algorithms and Regression Analysis, Akansha Kumar, Pavel Tsvetkov *(TAMU)*

9:20 a.m.

A Clash of Cultures — An Independent's Lessons from the Current WIPP Mess, Norbert T. Rempe *(ng(o)3)*

9:45 a.m.

Implementation of PFLOTRAN into the Waste Isolation Pilot Plant Performance Assessment, Heeho Park, Glenn Hammond *(SNL)*

10:10 a.m.

Early Stages of Cement Hydration in Brine Containing MgO: Preliminary Data on pH Changes and Implications for Actinide Chemistry, J. F. Lucchini, M. K. Richman, J. J. Swanson, D. T. Reed *(LANL)*

10:35 a.m.

MAXUS® Corrosion Performance in Spent Fuel Pool Environments, Matthew L. Eyre *(Eyre Nuclear Energy Consultancy)*, K. Scot Leuenroth *(Curtiss Wright Corp.)*, Xavier Clausse *(Nikkei Niigata Company)*, Toshiaki Yamazaki, Aaron Herfurth *(Nikkeikin Aluminum Core Technology Co.)*

Thermal Hydraulics: General—III

Sponsored by THD

Session Organizer: Igor A. Bolotnov *(NCSU)*

Cochairs: Elia Merzari *(ANL),* Igor A. Bolotnov (NCSU)

Lone Star C: 8:30-9:45 a.m.

8:30 a.m.

Concept for Accident Tolerant Light Water Reactor Helium Injection System, Caleb Massey, James Miller, Gokul Vasudevamurthy *(VCU)*

8:55 a.m.

Natural Convection Shutdown Heat Removal Test Facility (NSTF) Repeatability and Project Status, D. D. Lisowski, N. C. Bremer, C. D. Gerardi, M. T. Farmer *(ANL)*

9:20 a.m.

Containment Pressure Control Strategy Analysis for a Floating NPP, Qian Lin, Weizhong Zhang, Shengyi Si *(Shanghai Nuclear Engineering Research and Design Institut)*

ANS 8 Standards–Forum

Sponsored by NCSD

Session Organizer: Lon E. Paulson *(GE Hitachi Nuclear)*

Chair: Brian O. Kidd *(Babcock & Wilcox)*

Lone Star D: 8:30-11:30 a.m.

Speakers to be announced.

Nuclear Fuels

Sponsored by MSTD

Session Organizer: Kenneth J. Geelhood *(PNNL)*

Chair: Vincenzo V. Rondinella *(EC-JRC-ITU)*

Lone Star F: 8:30-11:00 a.m.

8:30 a.m.

Study of Niobium in UO_2 Advanced Nuclear Fuel Doped with NbOx, V. Pennisi, P. Martin, P. Matheron, Ch. Riglet-Martial *(CEA)*

8:55 a.m.

Grain Boundary Character and Fission Product Precipitation in SiC, Thomas M. Lillo, Isabella J. van Rooyen *(INL),* Yaqiao Wu *(Boise State Univ)*

9:20 a.m.

An Extensive Study of LiF-ThF4 Salt for the MSFR Fuel, E. Capelli, R. J. M. Konings *(EC-JRC; Delft Univ of Technology),* O. Beneš *(EC-JRC)*

9:45 a.m.

Oxygen Potential of High Burnup UO_2, V. V. Rondinella *(EC-JRC)*

10:10 a.m.

Fabrication of Boron-bearing UO_2 Fuel Pellet for HANARO Irradiation Test, Young Woo Rhee, Keon Sik Kim, Jae Ho Yang, Yang Hyun Koo *(KAERI)*

10:35 a.m.

Detailed 3D Solids Dynamics of Gas-Solid Spouted Beds using Gamma Ray Computed Tomography (CT) and Radioactive Particle Tracking (RPT) Techniques, Neven Ali, Thaar Al-Juwaya, Muthanna Al-Dahhan *(Missouri Univ of Science and Technology)*

Progress in Student's Research and Design Projects

Sponsored by RPD; cosponsored by AAD, ANSTD, ETWDD, FED

Session Organizer and Chair: Blair P. Bromley *(Canadian Nuclear Society)*

Crockett A/B: 8:30-9:20 a.m.

8:30 a.m.

Impact of Isotope Separation on Burnable Absorber Performance, Chidong Kong *(UNIST),* Ho Cheol Shin *(Korea Hydro & Nuclear Power Co.),* Deokjung Lee *(UNIST)*

8:55 a.m.

Characterization of Thermal Conductivity using Deterministic Phonon Transport in Rattlesnake, Jackson R. Harter, P. Alex Greaney, Todd S. Palmer *(Oregon State Univ)*

Reactor Physics: General—III

Sponsored by RPD

Session Organizer: Alexander Stanculescu *(INL)*

Chair: Mark D. DeHart *(INL)*

Crockett C/D: 8:30-10:10 a.m.

8:30 a.m.

Sensitivity/Uncertainty Analysis of the Effective Delayed Neutron Fraction with Deterministic Codes, Gerardo Aliberti, Micheal A. Smith *(ANL)*

8:55 a.m.

Application of the BigT Burnable Absorber to AP1000 First Core, Mohd-Syukri Yahya, Yonghee Kim *(KAIST)*

9:20 a.m.

NECP-CACTI: Pressurized Water Reactor Lattice Code Development, Yunzhao Li, Chao Tian, Youqi Zheng, Hongchun Wu, Liangzhi Cao *(Xi'an Jiaotong Univ)*

9:45 a.m.

Tutorial Series on Characterization of Uncertainty (TUSC): Reduced Order Modeling, Dimensionality, Reduction, Surrogate Modeling, Function Approximation, Fitting, etc., Hany S. Abdel-Khalik *(Purdue Univ)*

FELLOW

Presented to

J. Wesley Hines

For his internationally recognized accomplishments as a leader in the discovery and development of reliability enhancing condition monitoring technologies in the nuclear industry. These technologies have enhanced operational understanding of the condition of vital plant components, improving nuclear power plant operation and economics throughout the world.

FELLOW

Presented to

Han Gyu Joo

For leading the development of two of the most preeminent reactor physics codes in the nuclear industry. In 1995, he initiated the development of the nodal neutronics code PARCS which has become the U.S. NRC core neutronics simulator. More recently, he has developed the software package NTRACER in which he pioneered the methods that are now the standard for high fidelity reactor physics core analysis.

FELLOW

Presented to

Yutai Katoh

For his pioneering research on microstructural mechanisms of radiation damage in advanced materials for nuclear fission and fusion applications with particular impact on the development of ceramics and ceramic composites.

FELLOW

Presented to

Mark Peters

For his scientific and technical leadership in nuclear energy and nuclear S&T, and repository science and advanced fuel cycles in particular, warrant the honor of ANS Fellow. Through his continued technical leadership in the U.S. repository program, technical direction and capability is maintained and bolstered as the policy framework evolves.

FELLOW

Presented to

Shripad Revankar

For his pioneering contributions to experimental and theoretical methods for nuclear thermal hydraulics and safety that have advanced the state-of-the-art in scaling, integral system testing, choked flow, passive cooling systems, composite fuels, and nuclear hydrogens systems; and for his original contributions to the development of interfacial area concentration measurement and database for advanced two-fluid model development.

AWARD FOR OUTSTANDING SERVICE: SCIENTIFIC PUBLICATIONS

Presented to

Nicholas Tsoulfanidis

For 18 years of dedicated service as technical editor of the *Nuclear Technology Journal* and for his inspirational leadership of current and future generations of researchers and educators.

WALKER LEE CISLER MEDAL

Presented to

Robert N. Hill

For his outstanding scientific and engineering research achievements and international recognition as leader and advocate for the design, development, and deployment of fast reactor technologies.

MISHIMA AWARD

Presented to

Arthur T. Motta

For his sustained and impactful contributions to the field of irradiation materials science and his leadership and guidance of the next generation of researchers.

ARTHUR HOLLY COMPTON AWARD IN EDUCATION

Presented to

John C. Lee

For his international contributions to education and research in nuclear reactor engineering and safety over four decades.

SPECIAL AWARD

Presented to

Richard K. Lester

For his incisive, rational examination of nuclear energy benefits to a clean energy future, and for leadership in emphasizing the importance of communication in nuclear engineering education.

HENRY DEWOLF SMYTH NUCLEAR STATESMAN AWARD (NEI)

Presented to

George Apostolakis

For his long, distinguished career as a nuclear regulator, professor, engineer, and risk analyst, also his leadership in promoting nuclear safety worldwide.

PRESIDENTIAL CITATION

Presented to

Mimi Limbach

For her distinguished, dedicated, enthusiastic and sustained service to ANS in numerous capacities within the Society, and for being an articulate, passionate and effective communicator about the benefits of nuclear technology. Mimi has provided exceptional leadership in developing ANS communications tools and messages, and is recognized for her outstanding facilitation of the Center for Nuclear Science and Technology Information's Radiation Dose Communication Summit, February 4, 2015.

PRESIDENTIAL CITATION

Presented to

Raymond Klann

For his dedication and leadership to ANS by improving upon the processes and structure of the management of topical meetings. Ray works tirelessly to ensure the adherence to safe measures throughout the planning process while emphasizing the importance of the role the planning committee plays in the success of the meetings. Ray continues to utilize best practices to implement positive change and guidelines for others to follow.

PRESIDENTIAL CITATION

Presented to

Kai Vetter

For his exceptional commitment and dedication to advancing nuclear science and technology, and outreach to the community to analyze and explain the impact of nuclear on the environment. His role in both RadWatch and KelpWatch, monitoring North America's west coast for potential impacts from the accident at Fukushima, are exemplary efforts to advance public awareness and understanding. Dr. Vetter's initiative in establishing and promoting the Institute for Resilient Communities to use science and technology to understand and minimize the impact associated with sudden or long-term changes induced by human actions or nature further exemplifies his commitment to advance the use of nuclear science and technology for the benefit of humanity.

PRESIDENTIAL CITATION

Presented to

Adolf Garcia

Adolf Garcia is recognized for his passion and enthusiasm for the nuclear criticality safety profession, his fundamental contributions to the ANS-8 series of standards that are the backbone of the profession, and his commitment to mentoring young professionals. Adolf was a strong advocate of the American Nuclear Society and proponent of the value of ANS standards, meetings, mentoring, and scholarships. Adolf's legacy is evident in the many lives that he touched and the deep respect that he has forever earned amongst his colleagues.

DISTINGUISHED SERVICE AWARD

Presented to

Remy DeVoe and Justin Knowles

For their work investigating the flawed incentives in the proposed EPA Clean Power Plan that led to a national grassroots effort supporting "Nuclear Equality."

DON MILLER AWARD

Presented to

Gary Lynn Johnson and John M. O'Hara

In Recognition of Outstanding Accomplishments in the Field of Instrumentation, Control, and Human-Machine Interface Technologies.

SCHOLARSHIP RECIPIENTS - 2015-2016

•INCOMING FRESHMAN CATEGORY•

Andrew Christopher Denig – Mill Creek High School
Siobhan Marie Fox – Harold L. Richards High School
Brian Easton Heissenbuttel – Arapahoe High School
Jacqueline Lee Trautman – South Lakes High School

•UNDERGRADUATE CATEGORY•

Sophomore Undergraduate

Samantha Hazel Michael – North Carolina State University
Austin D. Mullen – University of Tennessee
Kristina Elizabeth Reed – Georgia Institute of Technology
Colby King Searle – Utah State University

Junior/Senior Undergraduate

Kelsey Marie Amundson – University of Wisconsin
Alaina Eleanor Bott – Pennsylvania State University
Carl Glenn Britt, III – University of Tennessee
Karl Douglas Folland – Utah State University
Rachel Nichole Gaudet – University of Tennessee
Shaun Ransom Harris – Utah State University
Shane Christopher Henderson – North Carolina State University
Jacob Thomas Krizmanich – Pennsylvania State University
Adrian Michael Leandro – Pennsylvania State University
Amanda M. Lewis – Rensselaer Polytechnic Institute
William Roysdon Murray – North Carolina State University
Ethan Kimball Nickerson – Utah State University
Colton Jacob Oldham – University of Tennessee
Paul Benjamin Pierson – Idaho State University
Tyrel Christian Rupp – Utah State University
Shre Satpathy – North Carolina State University
Casey L. Stocking – North Carolina State University
Alyxandria Lorraine Wszolek – University of Tennessee

Angelo F. Bisesti Memorial Scholarship

Saya Kristy Nakano Rutherford – University of Tennessee

Raymond DiSalvo Memorial Scholarship

Travis Ty Willis – North Carolina State University

William R. & Mila Kimel Nuclear Engineering Scholarship

Samuel Joseph Cope – North Carolina State University

Robert G. Lacy Memorial

Evan William Folland – Utah State University

John R. Lamarsh Memorial Scholarship

A. Gabriel DeCaro – North Carolina State University

Robert T. (Bob) Liner Memorial Scholarship

Nicholas Franklin Herring – North Carolina State University

Hans P. Loewen Memorial Scholarship

Andrew Vitalievich Rouditchenko – Massachusetts Institute of Technology

Accelerator Applications Division Scholarship

Keeton Thayer Ross – University of California, Berkeley

Decommissioning and Environmental Sciences Division Undergraduate Scholarship

Kathryn Ann Mummah – University of Illinois

Operations and Power Division Scholarship

Stephen Volosov Langellotti – North Carolina State University

Operations & Power Division Robert L. Long Memorial Scholarship
Gabrielle Stephanie Cobos – University of California, Irvine

Rudy Stamm'ler Undergraduate Reactor Physics Scholarship
Travis Labossier-Hickman – University of Tennessee

Charles (Tommy) Thomas Memorial
Miriam Anne Rathbun – University of Pittsburgh

•GRADUATE CATEGORY•

Kazi Kausik Ahmed – University of Wisconsin-Madison
Matthew Shawn Ellis – Massachusetts Institute of Technology
Michael Anthony Fusco – North Carolina State University
Ryan Patrick Kelly – Texas A&M University
Matthew James Marcath – University of Michigan
Daniel Nunez – University of Michigan
Marc Lavi Ruch – University of Michigan
Erik Daniel Walker – University of Tennessee
Daniel David Wooten – University of California, Berkeley

Everitt P. Blizard Scholarship
Joel Aaron Kulesza – University of Michigan

Robert A. Dannels Memorial Scholarship
Timothy Patrick Burke – University of Michigan

Vern R. Dapp Memorial Scholarship
Jonathan Alan Walsh – Massachusetts Institute of Technology

Decommissioning & Environmental Sciences Division Graduate Scholarship
Steven Adam Stratz – University of Tennessee

Alan F. Henry/Paul A. Greebler Memorial Scholarship
Richard Manuel Vega – Texas A&M University

Saul Levine Memorial Scholarship
Derek Man Hon Hung – University of Michigan

Nuclear Criticality Safety Pioneers Scholarship
Megan Rachelle Smith – North Carolina State University

Fuel Cycle & Waste Management Division John D. Randall Scholarship
Michael John Servis – Colorado School of Mines

James F. Schumar Scholarship
Matthew Jeffrey Jasica – University of Wisconsin-Madison

Robert E. Uhrig Graduate Scholarship
Zachary Allen Welz – University of Tennessee

Vogt Radiochemistry Scholarship
Ashlyn Victoria Jones – University of Tennessee

•NEED SCHOLARSHIP AWARDS•

John and Muriel Landis Scholarships
Jasmin M. Alsaied – North Carolina State University
Molly Jean Glass – North Carolina State University
Rittu Sam Raju – Pennsylvania State University
Nina Colby Sorrell – North Carolina State University
James William Totten – University of Florida

•NEED DELAYED EDUCATION SCHOLARSHIP FOR WOMEN•

Remy Michelle Wallace – University of California – Berkeley

•LOCAL SECTION SCHOLARSHIP AWARDS•

Pittsburgh Local Section Undergraduate Scholarship
Cordell James Delzer – Pennsylvania State University

Pittsburgh Local Section Graduate Scholarship
Gregory Michael Borza – Pennsylvania State University

Washington, DC Local Section Undergraduate Scholarship
Christopher James Flower – Duke University

•COMMUNITY COLLEGE/TRADE SCHOOL SCHOLARSHIP AWARDS•

Kent Hamlin Memorial Scholarship
Sergio Copus-Nunez – Estrella Mountain Community College
Jeffrey C. Hansen – University of Pittsburgh

NATIONAL COMMITTEES

Accreditation, Policies & Procedures
Sunday, June 7, 11:00 a.m.-12:00 p.m.
Location: Republic C

Board of Directors
Wednesday, June 10, 4:00 p.m.-5:30 p.m.
Thursday, June 11, 8:00 a.m.-4:00 p.m.
Location: Texas Ballroom A

Bylaws & Rules
Sunday, June 7, 4:00 p.m.-5:30 p.m.
Location: Republic A

Communications
Meeting
Sunday, June 7, 4:00 p.m.-5:30 p.m.
Location: Crockett C/D

Finance
Tuesday, June 9, 2:00 p.m.-7:00 p.m.
Location: Bonham E

Honors & Awards
Monday, June 8, 4:00 p.m.-6:00 p.m.
Location: Bonham C

International
Sunday, June 7, 11:30 a.m.-2:30 p.m.
Location: Bonham B

Local Section Workshop
Sunday, June 7, 9:00 a.m.-12:00 p.m.
Location: Seguin A/B

Membership
Sunday, June 7, 10:00 a.m.-12:00 p.m.
Location: Presidio C

National Program
Screening
Sunday, June 7, 10:00 a.m.-12:00 p.m.
Location: Bonham C

Sub-Committee
Wednesday, June 10, 11:30 a.m.-1:00 p.m.
Location: Bonham D

Program
Wednesday, June 10, 4:00 p.m.-7:00 p.m.
Location: Bonham D

NEED
Sunday, June 7, 7:30 p.m.-9:30 p.m.
Location: Travis C

Planning
Sunday, June 7, 2:00 p.m.-6:00 p.m.
Location: Travis B

President's Meeting with Committee Chairs
Sunday, June 7, 8:00 a.m.-9:00 a.m.
Location: Texas A

President's Meeting with Division Chairs
Sunday, June 7, 9:00 a.m.-10:00 a.m.
Location: Texas A

Professional Development Coordination
Tuesday, June 9, 4:00 p.m.-5:00 p.m.
Location: Bonham D

Professional Divisions
Workshop
Saturday, June 6, 5:00 p.m.-7:00 p.m.
Location: Republic B

Committee
Tuesday, June 9, 4:00 p.m.-5:30 p.m.
Location: Texas A

Professional Engineering Exam
PEEC Item Writer's Workshop
Saturday, June 6, 5:00 p.m.-10:00 p.m.
Location: Bonham D

PEEC Single Reference Development
Sunday, June 7, 12:30 p.m.-2:30 p.m.
Location: Seguin A/B

PEEC Committee Meeting
Sunday, June 7, 4:00 p.m.-6:00 p.m.
Location: Seguin A/B

Professional Women in ANS
Monday, June 8, 4:00 p.m.-6:00 p.m.
Location: Bonham D

Public Policy
Wednesday, June 10, 11:30 a.m.-1:30 p.m.
Location: Bonham E

Publication Steering
Meetings, Proceedings & Transactions
Sunday, June 7, 9:00 a.m.-10:00 a.m.
Location: Presidio A/B

Book Publishing
Sunday, June 7, 11:00 a.m.-12:30 p.m.
Location: Independence

Technical Journals
Sunday, June 7, 1:00 p.m.-4:00 p.m.
Location: Independence

Nuclear News Editorial
Sunday, June 7, 4:00 p.m.-6:00 p.m.
Location: Independence

Nuclear Technology Advisory
Sunday, June 7, 4:30 p.m.-5:30 p.m.
Location: Bonham A

Publication Steering
Monday, June 8, 4:30 p.m.-6:30 p.m.
Location: Bonham B

Scholarship Policy & Coordination
Monday, June 8, 12:00 p.m.-1:00 p.m.
Location: Bonham C

Student Sections
Executive
Monday, June 8, 6:00 p.m.-7:00 p.m.
Location: Lone Star A

Reports
Monday, June 8, 7:00 p.m.-8:00 p.m.
Location: Lone Star A

SPECIAL COMMITTEES

Special Committee on Utility Engagement
Tuesday, June 9, 9:00 a.m.-11:00 a.m
Location: Bonham B

Special Committee on the Congressional Fellow Program
Tuesday, June 9, 3:30 p.m.-4:30 p.m.
Location: Independence

OTHER COMMITTEES

Christian Nuclear Fellowship
Monday, June 8, 7:00 p.m.-8:30 p.m.
Location: Independence
Wednesday, June 10, 7:15 a.m. - 8:15 a.m.
Location: Bonham E

KNS – US Chapter Meeting
Monday, June 8, 5:00 p.m.-7:00 p.m.
Location: Independence

NEDHO
Sunday, June 7, 4:00 p.m.-5:30 p.m.
Location: Republic C

NURETH
Tuesday, June 9, 7:00 a.m.-9:00 a.m.
Location: Bonham D

UWC Planning
Sunday, June 7, 1:00 p.m.-2:00 p.m.
Location: Bonham C

DIVISION COMMITTEES

Accelerator Applications
Executive
Monday, June 8, 11:30 a.m.-1:30 p.m.
Location: Bonham E

Aerospace Nuclear Science & Technology
Sunday, June 7, 12:00 p.m.-2:00 p.m.
Location: Republic C

Biology & Medicine
Computational Medical Physics Working Group
Sunday, June 7, 10:00 a.m.-11:00 a.m.
Location: Travis C

Committee of the Whole
Sunday, June 7, 4:00 p.m.-5:30 p.m.
Location: Bonham B

Decommissioning and Environmental Sciences
Program
Sunday, June 7, 3:30 p.m.-4:30 p.m.
Location: Travis A

Executive
Sunday, June 7, 4:30 p.m.-5:30 p.m.
Location: Travis A

Education, Training & Workforce Development
Program
Sunday, June 7, 10:30 a.m.-12:00 p.m.
Location: Bonham D

Alpha Nu Sigma Honor Society
Sunday, June 7, 1:00 p.m.-2:00 p.m.
Location: Travis B

University/Industry/Government Relations
Sunday, June 7, 1:00 p.m.-2:00 p.m.
Location: Bonham D

Executive
Sunday, June 7, 2:00 p.m.-4:00 p.m.
Location: Bonham D

Fuel Cycle & Waste Management
Program
Sunday, June 7, 12:00 p.m.-1:00 p.m.
Location: Crockett C/D

Executive
Sunday, June 7, 1:00 p.m.-2:30 p.m.
Location: Crockett C/D

Technical Operating & Standards
Sunday, June 7, 2:30 p.m.-3:30 p.m.
Location: Crockett C/D

Fusion Energy
Executive
Sunday, June 7, 3:00 p.m.-5:00 p.m.
Location: Presidio C

Human Factors, Instrumentation & Controls
Program
Sunday, June 7, 11:00 a.m.-12:00 p.m.
Location: Republic B

Executive
Sunday, June 7, 12:00 p.m.-2:00 p.m.
Location: Republic B

Isotopes & Radiation
Joint Program Committee
Sunday, June 7, 1:30 p.m.-2:30 p.m.
Location: Travis C

Executive
Sunday, June 7, 2:30 p.m.-6:00 p.m.
Location: Travis C

Materials Science & Technology
Executive
Monday, June 8, 6:30 p.m.-8:30 p.m
Location: Bonham B

Mathematics & Computation
Program
Sunday, June 7, 1:00 p.m.-2:00 p.m.
Location: Republic A

Executive
Sunday, June 7, 2:00 p.m.-4:00 p.m.
Location: Republic A

Nuclear Criticality Safety
Program
Sunday, June 7, 1:00 p.m.-2:00 p.m.
Location: Texas A

Education
Sunday, June 7, 2:00 p.m.-3:00 p.m.
Location: Texas A

Executive
Sunday, June 7, 3:00 p.m.-4:30 p.m.
Location: Texas A

Nuclear Installations Safety
Executive
Sunday, June 7, 7:30 p.m.-8:30 p.m.
Location: Bonham D

Program
Sunday, June 7, 4:00 p.m.-5:30 p.m.
Location: Bonham D

Nuclear Nonproliferation Policy
Special Advisory Group
Sunday, June 7, 1:30 p.m.-2:30 p.m.
Location: Crockett A/B

Program
Sunday, June 7, 2:30 p.m.-3:30 p.m.
Location: Crockett A/B

Executive
Sunday, June 7, 3:30 p.m.-4:30 p.m.
Location: Crockett A/B

NNTG/IRD/FC&WM Integration
Sunday, June 7, 4:30 p.m.-5:00 p.m.
Location: Crockett A/B

Operations and Power
Program
Sunday, June 7, 2:00 p.m.-3:30 p.m.
Location: Bonham C

Executive
Sunday, June 7, 3:30 p.m.-6:00 p.m.
Location: Bonham C

Radiation Protection & Shielding
Program
Sunday, June 7, 2:00 p.m.-4:00 p.m.
Location: Bonham E

Executive
Sunday, June 7, 4:00 p.m.-6:00 p.m.
Location: Bonham E

Reactor Physics
Honors & Awards
Sunday, June 7, 10:00 a.m.-11:00 a.m.
Location: Presidio A/B

Goals & Planning
Sunday, June 7, 1:00 p.m.-2:00 p.m.
Location: Presidio A/B

Program
Sunday, June 7, 2:00 p.m.-4:00 p.m.
Location: Presidio A/B

Executive
Sunday, June 7, 4:00 p.m.-6:00 p.m.
Location: Presidio A/B

Robotics & Remote Systems
Sunday, June 7, 12:00 p.m.-4:00 p.m.
Location: Bonham A

Thermal Hydraulics
Program
Sunday, June 7, 2:30 p.m.-4:30 p.m.
Location: Republic B

Executive
Sunday, June 7, 4:30 p.m.-6:00 p.m.
Location: Republic B

Young Member Group (TG)
Executive
Monday, June 8, 11:30 a.m.-1:00 p.m.
Location: Lone Star B

STANDARDS COMMITTEES

SC 6 Opening Meeting
Friday, June 5, 9:00 a.m.-12:00 p.m.
Location: Bonham C

SC 6 WG 1
Friday, June 5, 1:00 p.m.-5:00 p.m.
Location: Bonham C

SC 6 WG 2
Friday, June 5, 1:00 p.m.-5:00 p.m.
Location: Bonham B

SC 6 WG 3
Friday, June 5, 1:00 p.m.-5:00 p.m.
Location: Bonham D

SC 6 WG 1
Saturday, June 6, 9:00 a.m.-12:00 p.m.
Location: Bonham B

SC 6 WG 2
Saturday, June 6, 9:00 a.m.-12:00 p.m.
Location: Bonham C

SC 6 WG 3
Saturday, June 6, 9:00 a.m.-12:00 p.m.
Location: Bonham D

SC 6 Closing Meeting
Saturday, June 6, 1:00 p.m.-5:00 p.m.
Location: Bonham B

ANS-3.14 Working Group
Monday, June 8, 3:00 p.m.-5:00 p.m.
Location: Independence

ANS-8.1 Working Group
Tuesday, June 9, 3:30 p.m.-5:00 p.m.
Location: Bonham A

ANS-8.20 Working Group
Sunday, June 7, 9:30 a.m.-12:00 p.m.
Location: Travis B

ANS-8.26 Working Group
Tuesday, June 9, 7:00 a.m.-8:30 a.m.
Location: Bonham A

ANS-8.28 Working Group
Wednesday, June 10, 3:30 p.m.-5:30 p.m.
Location: Independence

ANS-10 Mathematics & Computations
Tuesday, June 9, 11:00 a.m.-1:00 p.m.
Location: Bonham A

Thursday, June 11, 11:00 a.m.-1:00 p.m.
Location: Bonham A

ANS-18.1 Working Group
Wednesday, June 10, 8:00 a.m.-12:00 p.m.
Location: Independence

ANS-19 Reactor Physics Subcommittee
Monday, June 8, 8:30 a.m.-10:30 a.m.
Location: Bonham C

FWDCC
Monday, June 8, 1:00 p.m.-5:00 p.m.
Location: Bonham A

ANS-54.1
Wednesday, June 10, 8:30 a.m.-12:00 p.m.
Location: Bonham A

ANS-57.3 Working Group
Wednesday, June 10, 8:00 a.m.-12:00 p.m.
Location: Bonham C

LLWRCC
Wednesday, June 10, 7:30 a.m.-2:00 p.m.
Location: Bonham B

NRNFCC
Monday, June 8, 1:00 p.m.-3:00 p.m.
Location: Independence

RP3C
Monday, June 8, 2:30 p.m.-6:00 p.m.
Location: Bonham E

Standards Board Meeting
Tuesday, June 9, 9:00 a.m.-5:00 p.m.
Location: Bonham C

ANS Organization Membership

The American Nuclear Society salutes the following industry leaders currently demonstrating their endorsement of ANS programs and efforts by subscribing as Organization Members, aiding our mission of supporting the advancement of nuclear science and technology.

Aggreko
Alaron Nuclear Services
All Girls Transportation & Logistics, Inc.
Alphasource Inc.
Alpiq Suisse SA
Ameren Missouri-Callaway Energy Center
American Electric Power Service Corp.
American Nuclear Insurers
AREVA
Arizona Public Service Co.
ATC Nuclear
Babcock & Wilcox Company
Barnhart Nuclear Services
Battelle Memorial Institute
Bechtel Nuclear, Security, & Environmental
Black & Veatch
Burns & McDonnell
Canadian Nuclear Laboratories
CB & I
Centrus Energy Corp.
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Cives Steel Co.
Dade Moeller & Associates
Diakont
Dominion Generation
Duke Energy Corporation
Electric Power Research Institute (EPRI)
Energy Future Holdings Corp. (Luminant)
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Los Alamos National Laboratory
Major Tool & Machine
McCallum-Turner, Inc.
Mega-Tech Services, LLC
Mitsubishi Nuclear Energy Systems, Inc.
Navarro Research & Engineering
Nebraska Public Power District
Newport News Shipbuilding
Nexus Technical Services Corporation
NGNP Industry Alliance
Nuclear Energy Institute (NEI)
Nuclear Plant Journal
Nuclear Three Inc.
Ontario Power Generation
Pacific Gas & Electric Company
PaR Nuclear
PPL Susquehanna, LLC
Procedure Solutions Management, LLC
PSC
Red Wolf Associates
Reef Industries, Inc.
RSCC Nuclear Cable
S&ME, Inc.
Sargent & Lundy
Savannah River National Laboratory
Southern Nuclear Operating Co.
Teledyne Brown Engineering, Inc.
Thermo Fisher Scientific
Toshiba America Nuclear Energy Corporation
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*See ans.org/orgmembers/memberlist for post-print roster updates.

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.

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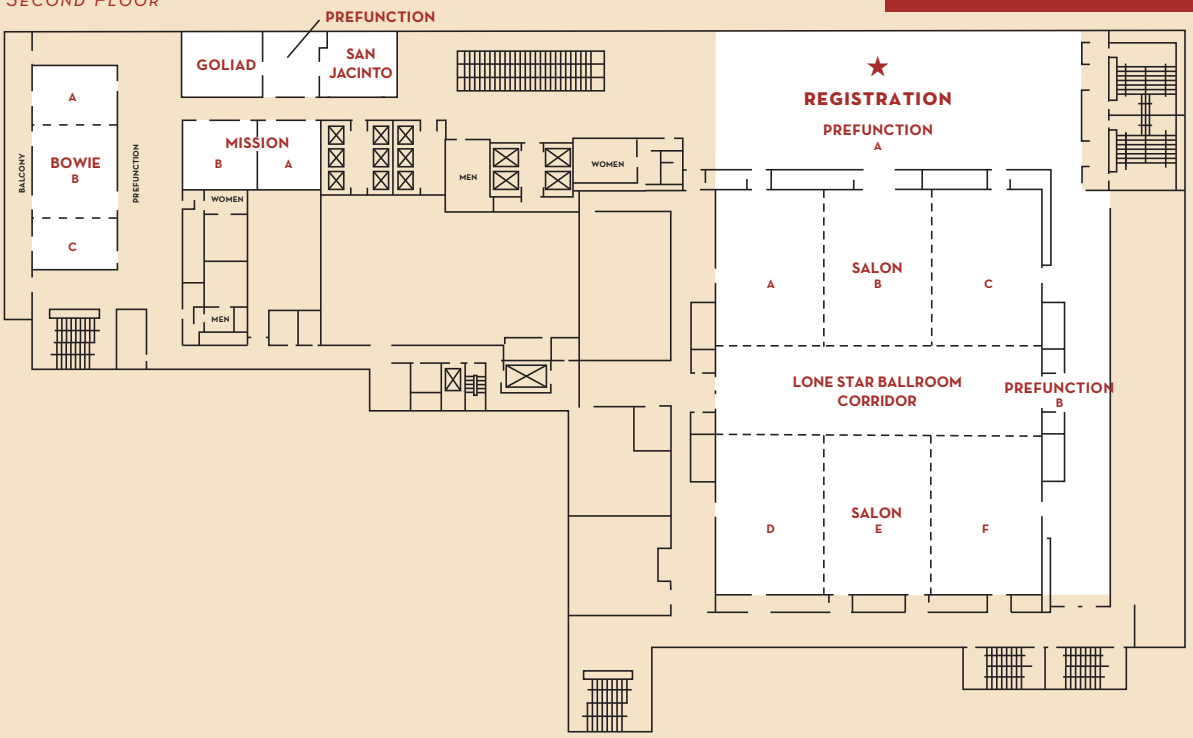
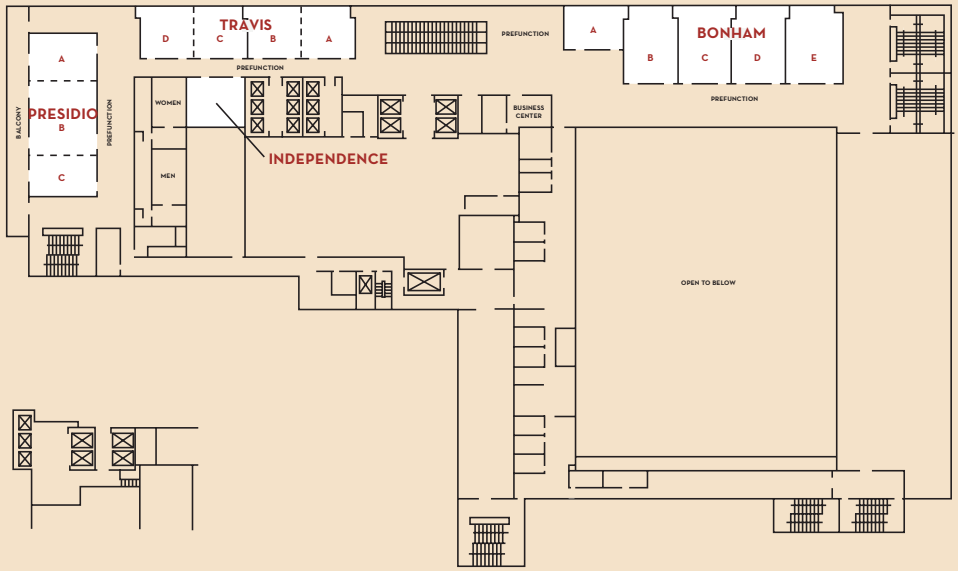
FLOOR PLAN

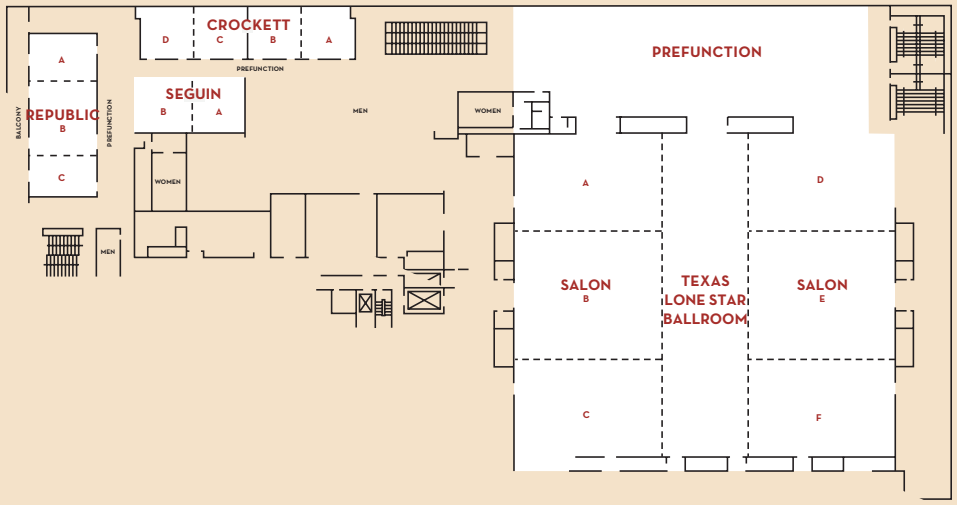
Second Floor



Third Floor



Fourth Floor



ANS Winter Meeting & Expo

November 8-12, 2015
Marriott Wardman Park
Washington, DC

ANS Meetings 2016

ANS Annual Meeting

JUN 12-16, 2016
New Orleans, LA
Hyatt Regency New Orleans

ANS Winter Meeting & Expo

NOV 6-10, 2016
Las Vegas, NV
Caesars Palace

Questions? **Meetings@ans.org**

Mark your calendar!

ANS Annual Meeting

June 7-11, 2015
Grand Hyatt San Antonio
San Antonio, TX

American Nuclear Society
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La Grange Park, IL 60526

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