

American Nuclear Society: 2011 ANNUAL MEETING

“Seizing the Opportunity: Nuclear’s **Bright** Future”

June 26-30, 2011 · Hollywood, FL
The Westin Diplomat Resort and Spa



*our most sincere thanks
to the following contributors
for their support of the*

**2011 ANS Annual Meeting:
“Seizing the Opportunity: Nuclear’s Bright Future”**

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Thank You!

GENERAL MEETING INFORMATION

- 4 MEETING HIGHLIGHTS
- 5 MEETING OFFICIALS
- 5-6 MEETING INFORMATION
Important information regarding hotel accommodations, spouse/guest hospitality, professional development workshops and more!
- 7 SPECIAL EVENTS
Details on the conference luncheons, evening events and spouse/guest tours.



Reception and Dinner on the Biscayne Lady Yacht

Page 7

TECHNICAL SESSIONS

- 8-9 TECHNICAL SESSIONS BY DIVISION
- 10-11 CONDENSED SCHEDULE
- 12-15 TECHNICAL SESSIONS BY DAY: MONDAY
- 15-23 TECHNICAL SESSIONS BY DAY: TUESDAY
- 23-31 TECHNICAL SESSIONS BY DAY: WEDNESDAY
- 31-35 TECHNICAL SESSIONS BY DAY: THURSDAY



Everglades Experience

Page 7

WORKSHOPS

- 36 DOE WORKSHOP
NCSP Accomplishments

COMMITTEE MEETINGS

- 37-38 COMMITTEE MEETINGS



Reception and Dinner at the Diplomat Country Club

Page 7



Shopping at Sawgrass Mills

Page 7

Meeting Highlights

SATURDAY, JUNE 25, 2011

- 8:00 AM – 5:00 PM Teachers' Workshop
- 5:00 PM – 6:30 PM Professional Divisions Workshop

SUNDAY, JUNE 26, 2011

- 1:00 PM – 1:30 PM First-Time Attendees Orientation
- 4:00 PM – 5:00 PM Student Assistant Training Session
- 5:00 PM – 6:00 PM Mentoring Program
- 6:00 PM – 7:30 PM ANS President's Reception

MONDAY, JUNE 27, 2011

- 8:00 AM – 10:00 AM Spouse/Guest Hospitality
- 8:30 AM – 11:30 AM 2011 ANS Annual Meeting: Plenary Session: "Seizing the Opportunity: Nuclear's Bright Future"
- 8:30 AM – 12:30 PM Spouse/Guest Tour: "Everglades Experience"
- 11:30 AM – 1:00 PM Operations and Power Division Luncheon
- 11:45 AM – 12:45 PM Green Bag Lunch: "Staffing an Exhibit"
- 1:00 PM – 4:00 PM 2011 ANS Annual Meeting: Technical Sessions
- 4:00 PM – 6:00 PM ANS President's Special Session: "Fukushima Update and Lessons Learned"
- 6:45 PM – 10:00 PM Evening Event: "Reception and Dinner on the Biscayne Lady Yacht"

TUESDAY, JUNE 28, 2011

- 8:00 AM – 10:00 AM Spouse/Guest Hospitality
- 8:30 AM – 11:30 AM 2011 ANS Annual Meeting: Technical Sessions
- 10:00 AM – 3:45 PM Spouse/Guest Tour: "Shopping at Sawgrass Mills"
- 11:30 AM – 1:00 PM ANS Honors and Awards Luncheon
- 1:00 PM – 4:00 PM 2011 ANS Annual Meeting: Technical Sessions
- 4:00 PM – 6:00 PM Special Session: "The Accident at Fukushima Daiichi—Preliminary Investigations—Panel
- 6:30 PM – 8:30 PM Reception for Alumni and Friends of the University of Tennessee Nuclear Engineering Department (Regency Ballroom 2)
- 6:30 PM – 8:30 PM Social Media Group Gathering

WEDNESDAY, JUNE 29, 2011

- 8:00 AM – 10:00 AM Spouse/Guest Hospitality
- 8:30 AM – 11:30 AM 2011 ANS Annual Meeting: Technical Sessions
- 1:00 PM – 4:00 PM 2011 ANS Annual Meeting: Technical Sessions
- 4:00 PM – 4:30 PM ANS Business Meeting
- 4:30 PM – 6:30 PM Public Information Workshop: Communicating with Policy Makers and the Public After Fukushima Daiichi"
- 7:00 PM – 10:00 PM Evening Event: "Reception and Dinner at the Diplomat Country Club"

THURSDAY, JUNE 30, 2011

- 8:30 AM – 11:30 AM 2011 ANS Annual Meeting: Technical Sessions
- 1:00 PM – 4:00 PM 2011 ANS Annual Meeting: Technical Sessions

FRIDAY, JULY 1, 2011

- 8:00 AM – 2:30 PM DOE Workshop: "NCSP Accomplishments"

Meeting Officials



GENERAL CHAIR:
Jim Ferland
Westinghouse Electric Company



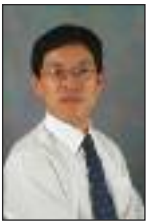
ASSISTANT GENERAL CHAIR:
Karen Fischetti
Westinghouse Electric Company



**ASSISTANT to the
GENERAL CHAIR:**
Janice Johnston
Westinghouse Electric Company



**TECHICAL PROGRAM
CHAIR (TPC):**
Charlotta Sanders
University of Las Vegas, Nevada



ASSISTANT TPC:
Xiaodong Sun
The Ohio State University



ASSISTANT TPC:
W. David Pointer
Argonne National Laboratory



FINANCE CHAIR:
Mark W. Lloyd
Westinghouse Electric Company



STUDENT CHAIR:
Andrew Cartas

Meeting Information

“Seizing the Opportunity: Nuclear’s Bright Future”



The Westin Diplomat Resort and Spa

Accommodations/ Hotel Information

The Westin Diplomat Resort and Spa will be the location for the 2011 ANS Annual Meeting, where all activities, technical sessions and governance committee meetings will take place.

Meeting Information

The 2011 ANS Annual Meeting will be held June 26-30, 2011, in Hollywood, Florida.

ANS Registration

ANS Registration will be located in the Upper Convention Center Lobby of the hotel on Saturday, June 25, 2011 through Thursday, June 30, 2011. Meeting registration, speakers' & session chairs' desk and the message desk will also be located in the ANS registration area. Meeting registration is required for all attendees and presenters. Badges are required for admission to all technical sessions and events.

Registration Hours:

SATURDAY, JUNE 25, 2011 • 2:00 P.M. – 5:00 P.M.

SUNDAY, JUNE 26, 2011 • 11:00 A.M. – 7:00 P.M.

MONDAY, JUNE 27, 2011 • 7:30 A.M. – 5:00 P.M.

TUESDAY, JUNE 28, 2011 • 7:30 A.M. – 5:00 P.M.

WEDNESDAY, JUNE 29, 2011 • 7:30 A.M. – 5:00 P.M.

THURSDAY, JUNE 30, 2011 • 7:30 A.M. – 2:00 P.M.

Meeting Information

First-Time Attendee Orientation

The ANS Membership Committee will offer an orientation session for the 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 1:00–1:30 p.m. on Sunday, June 26, 2011, in Room 312.

Student Assistant Program

Attendance at the 2011 ANS Annual Meeting is an exciting professional opportunity for college and graduate students. To help defray travel and living expenses, students can sign up to work as session chairs' assistants. Student assistants must attend the student training session on Sunday, June 26, 2011, 4:00 p.m. – 5:00 p.m. in the Diplomat Ballroom 1.

Student assistants receive free meeting registration and a copy of the meeting TRANSACTIONS.

All students are responsible for paying their own room, tax, and incidentals. ANS student members who register for the meeting and/or work as session chairs' assistants should pick up a travel assistance form which can be found in the student headquarters room.

Student travel assistance is provided through contributions from the ANS professional divisions.

The student headquarters room will be located in the Room 217.

Mentoring Program

A special mentoring program will be held from 5:00 p.m. – 6:00 p.m. on Sunday, June 26, 2011, in the Room 205.

ANS members who will serve as mentors hold a variety of positions within the Society, serving on governance committees and working within the divisions. The mentors encompass a wide range of careers and technical specialties, all of which they hope to share with first-time attendees, student members, new members, and those seeking career advancement and networking opportunities.

Notice for Speakers

All speakers and session chairs must sign in at the "Speakers' Desk," located in the Upper Convention Center Lobby of the hotel during registration hours. A Speakers' Preview Room, Room 203 of the hotel, will be available during the following hours:

Sunday, June 26, 2011
7:30 a.m. – 3:00 p.m.

Monday, June 27, 2011
7:00 a.m. – 4:00 p.m.

Tuesday, June 28, 2011
7:00 a.m. – 4:00 p.m.

Wednesday, June 29, 2011
7:00 a.m. – 4:00 p.m.

Thursday, June 30, 2011
7:00 a.m. – 12:00 p.m.

Audio/visual equipment will be set up; so, that speakers may preview their presentation material.

Conference Office

Location: Room 219

ANS Secretariat

Location: Room 220

ANS Media Center

Monday, June 27, 2011
7:45 a.m. – 4:00 p.m.

Tuesday, June 28, 2011
8:00 a.m. – 4:00 p.m.

Wednesday, June 29, 2011
8:00 a.m. – 4:00 p.m.

Location: Room 216

Green Bag Lunch

"Staffing an Exhibit"
Monday, June 27, 2011
11:45 a.m. – 12:45 p.m.
Location: Room 316

Please join us for an interactive discussion of successful techniques for staffing an indoor exhibit at events such as science teacher conventions, career fairs, etc. Plan on bringing your lunch and trading ideas with other attendees.

Social Media Group Gathering

Tuesday, June 28, 2011
6:30 p.m. – 8:30 p.m.
Location: Room 307

A meeting of people interested in social media and the use of relevant tools and techniques to enhance communication about nuclear science and engineering. Open to all conference attendees.

Public Information Workshop

"Communicating with Policy Makers and the Public After Fukushima Daiichi"
Wednesday, June 29, 2011
4:30 p.m. – 6:30 p.m.
Location: Atlantic Ballroom 1

The events in Japan at Fukushima Daiichi and their aftermath have had a real impact on public opinion, and therefore, how we should be speaking with the media, policy makers and the public about nuclear energy.

In this session, Mimi Limbach and Craig Piercy will share what they've learned about how to most effectively talk about nuclear energy in this new environment, and get insights from ANS Members about the steps that ANS and its members should be taking.

Spouse/Guest Hospitality

Spouse/guest hospitality breakfast will be served from 8:00 a.m. – 10:00 a.m., Monday, June 27, 2011, through Wednesday, June 29, 2011, in the Crystal Room. 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. Spouse/guest tours are scheduled. Registration for the tours is separate from the spouse/guest meeting registration.

Attention Runners: ANS Fun Run

On Tuesday, June 28, 2011, there will be a noncompetitive run starting at 6:00 a.m. from the front entrance of the hotel. We are looking forward to seeing you at the fun run in Hollywood, FL. Bring shoes and a big smile.

DOE Workshop

"NCSP Accomplishments"
Friday, July 1, 2011
8:00 a.m. – 2:30 p.m.
Location:
Diplomat Ballroom 1 & 2

There is no registration fee for this workshop. Please turn to page 36 for additional information.

CONFERENCE LUNCHEONS

Operations and Power Division Luncheon

MONDAY, JUNE 27, 2011
11:30 A.M. – 1:00 P.M.
Location: Room 303

Tickets can be purchased on-site at the ANS Registration Desk for \$50.

Honors and Awards Luncheon

TUESDAY, JUNE 28, 2011
11:30 A.M. – 1:00 P.M.
Location: Room 307

Tickets can be purchased on-site at the ANS Registration Desk for \$50.

EVENING EVENTS

PLEASE NOTE:

- *You must be registered for the meeting to attend evening events.*
- *Times listed are departure times and return times to/from the hotel. Busses will leave promptly from the Convention Center Lower Lobby of the hotel.*

ANS President's Reception

SUNDAY, JUNE 26, 2011
6:00 P.M. – 7:30 P.M.
Location: South Palm Court/Infinity Pool

One ticket to the ANS President's Reception is included in the full meeting registration fee.

Additional tickets can be purchased on-site at the ANS Registration Desk for \$85.

Reception and Dinner on the Biscayne Lady Yacht

MONDAY, JUNE 27, 2011
6:45 PM – 10:00 PM



The Biscayne Lady is a 111-foot, 380-passenger luxury yacht built using state-of-the-art marine construction technology. The vessel features a 45-foot beam, 8-foot ceilings and a catamaran designed twin hulls to provide the most stable and comfortable cruising experience on the water. The Biscayne Lady is designed with ultra-modern interior and exterior spaces – providing three grand decks.

The main deck houses the spacious dining area with two main bars. Exterior spaces are also available for guests who want to step out for a breath of that South Florida air. The second level houses the salon, which features ultra modern seating areas, panoramic window views of the waterways and an additional bar.

The third deck (sky deck) is the most popular area on the vessel, and with good reason. Boasting a nearly unobstructed 360-degree panoramic view of the surrounding environment, passengers are delighted by the open air, clear skies, and the scenic vistas along the South Florida coastline. Welcome aboard the Biscayne Lady!

Tickets can be purchased on-site at the ANS Registration Desk for \$55.

Reception and Dinner at the Diplomat Country Club

WEDNESDAY, JUNE 29, 2011
7:00 PM – 10:00 PM



There are many images that South Florida is associated with, but none as definitive and singular as South Beach...in particular a stretch of ocean-side street known as Deco Drive. This fast paced, glitzy 10 blocks of real estate is located in the historic Art Deco district and boasts some of the most well known architecture anywhere in the world. These stunning buildings take you back to a time of classic South Beach that has, in recent years, combined with a myriad of styles, cultures and influences to create a buffet for the senses... Tonight, colors and lighting will bring some of that Deco Vibe to the ballroom! As you walk into the ballroom, your attention will be captivated by a vast array of colors and textures. Your feast will include South Florida favorites, coastal favorites; as well as some Cuban and international offerings.

Tickets can be purchased on-site at the ANS Registration Desk for \$55.

SPOUSE/GUEST TOURS

Everglades Experience

MONDAY, JUNE 27, 2011
8:30 AM – 12:30 PM

Feel the excitement and learn the history of Florida's most remarkable treasure – the Everglades. As one of the rare subtropical ecosystems, the Everglades hold spectacular mysteries. Renew your spirit as you glide across miles of river at speeds up to 35 mph, and get up close and personal with native wildlife, many of whom are endangered in this fragile environment. This once in a lifetime adventure will create lasting memories as you discover the secrets of this untamed wilderness the Seminoles called home.

You will begin your adventure on a private airboat tour of the Florida Everglades. Your tour will be led by an experienced Everglades tour guide. During the tour, you'll catch a glimpse of endangered wildlife as you skim across the glassy water. Your trip will also include viewing various animal exhibits throughout the park. You will have the chance to get close to animals like alligators, crocodiles, a Florida panther, birds and other species. Animal handlers will be available to answer questions and teach you about the care of the animals in the glades. You will even have the chance to hold a live gator if desired.

PLEASE NOTE: It is recommended that you wear comfortable clothing, hats, walking shoes, sunglasses and sun-block.

Tickets can be purchased on-site at the ANS Registration Desk for \$73.

Shopping at Sawgrass Mills

TUESDAY, JUNE 28, 2011
10:00 AM – 3:45 PM

Sawgrass Mills Mall is Florida's largest retail & entertainment center. It features more than 350 name-brand stores and outlets like Nordstrom Rack, Coach, Burberry, The Gap Outlet, OFF 5th Saks Fifth Avenue Outlet, JC Penny and Burlington Coat Factory, as well as full-service restaurants like Cheesecake Factory, PF Chang's and Grand Lux Café. Add in a 24 screen movie theatre, billiard clubs, massage stations and bars and you get a truly well-rounded entertainment complex that has something for everyone.

Tickets can be purchased on-site at the ANS Registration Desk for \$40.

(Lunch is on your own.)

Technical Sessions by Division

(Asterisks indicate special sessions. Parentheses indicate cosponsorship.)

Special Sessions

*Opening Plenary: “Seizing the Opportunity: Nuclear’s Bright Future,” Mon. a.m. (8:30–11:30 a.m.)

*ANS President’s Special Session: “Fukushima Update and Lessons Learned,” Mon. p.m. (4:00–6:00 p.m.)

*Special Session: “The Accident at Fukushima Daiichi—Preliminary Investigations—Panel,” Tues. p.m. (4:00–6:00 p.m.)

Biology and Medicine (BMD)

(Innovation in Radiation Detectors: New Designs, Improvements, and Applications), Tues. a.m.

(Impact of DOE-NEUP to Research Reactors and Nuclear Science Programs), Tues. p.m.

Proton and Ion Treatment of Cancer [in collaboration with the Computational Medical Physics Working Group], Wed. a.m.

Education, Training, and Workforce Development (ETWDD)

Research by U.S. DOE NEUP-Sponsored Students—I, Mon. p.m.

Research by U.S. DOE NEUP-Sponsored Students—II, Tues. a.m.

Research by U.S. DOE NEUP-Sponsored Students—III, Tues. p.m.

Kent Hamlin Memorial Session on Training, Human Performance, and Workforce Development, Wed. a.m.

Nuclear Communications: Getting It Right—Panel, Wed. p.m.

Key Nuclear Communication Messages—Panel, Wed. p.m.

Education and Training: General, Thurs. a.m.

Environmental Sciences (ESD)

Environmental Sciences: General, Thurs. p.m.

Fuel Cycle and Waste Management (FCWMD)

Very Long-Term Dry Storage of Spent Nuclear Fuel—I—Panel, Mon. p.m.

(Design and Analysis for Plutonium and Minor Actinides Transmutation—I), Mon. p.m.

Very Long-Term Dry Storage of Spent Nuclear Fuel—II—Panel, Tues. a.m.

Future of the Nuclear Fuel Cycle and Waste Management—Panel, Tues. p.m.

Used Fuel Component Recycle Advanced Waste Forms and Storage—I, Wed. a.m.

(Design and Analysis for Plutonium and Minor Actinides Transmutation—II), Wed. a.m.

SRS Plutonium Disposition Projects Update—Panel, Wed. a.m.

Used Fuel Component Recycle Advanced Waste Forms and Storage—II, Wed. p.m.

(Design and Analysis for Plutonium and Minor Actinides Transmutation—III), Wed. p.m.

Modeling and Simulation in Fuel Cycle Separations and Waste Form Development—I, Thurs. a.m.

Modeling and Simulation Fuel Cycle Separations and Waste Form Development—II, Thurs. p.m.

Fuel Cycle and Waste Management (FCWMD)

Best Practices in Interdisciplinary Safeguards and Nonproliferation Education—Papers/Panel, Thurs. p.m.

(Design and Analysis for Plutonium and Minor Actinide Transmutation—IV), Thurs. p.m.

Human Factors, Instrumentation, and Controls (HFICD)

DOE R&D Activities for Nuclear Power Instrumentation, Control, and Human-Machine Interface Technologies—Panel, Tues. a.m.

Digital Upgrade Experience Implementing NRC ISG-06—Panel, Tues. p.m.

Isotopes and Radiation (IRD)

Isotopes and Radiation: General, Mon. p.m.

Innovation in Radiation Detectors: New Designs, Improvements, and Applications, Tues. a.m.

Impact of DOE-NEUP to Research Reactors and Nuclear Science Programs, Tues. p.m.

Materials Science and Technology (MSTD)

Materials Science: General, Mon. p.m.

Nuclear Fuels and Materials, Tues. a.m.

Modeling and Simulation of Nuclear Fuels and Materials, Tues. p.m.

Thermal Physical Properties and Measurement Techniques for Nuclear Materials, Wed. a.m.

Novel Instrumentation and Measurement Techniques, Wed. p.m.

Mathematics and Computation (MCD)

Current Issues in Computational Methods—Roundtable “Monte Carlo Methods in Reactor Physics: Current Status and Future Prospects,” Mon. p.m.

Transport Methods: General, Tues. a.m.

(Nuclear Data Covariance: Evaluation, Processing, and Application—I), Tues. a.m.

(Reactor Analysis Methods—I), Tues. a.m.

Sensitivity and Uncertainty Methodologies in Nuclear Calculations—I, Tues. p.m.

Mathematical Modeling and Computational Methods, Wed. a.m.

Computational Methods: General, Wed. p.m.

(Reactor Analysis Methods—II), Wed. p.m.

(Nuclear Data Covariance: Evaluation, Processing, and Application—II), Thurs. a.m.

Sensitivity and Uncertainty Methodologies in Nuclear Calculations—II, Thurs. p.m.

Nuclear Criticality Safety (NCSD)

Data, Analysis, and Operations for Nuclear Criticality Safety—I, Tues. a.m.

Data, Analysis, and Operations for Nuclear Criticality Safety—II, Tues. p.m.

Proper Applications of Benchmarking in Criticality Safety, Wed. a.m.

Nuclear Criticality Safety Standards—Forum, Thurs. a.m.

Technical Sessions by Division

Nuclear Installation Safety (NISD)

Highlights from PSA 2011—Panel, Mon. p.m.

Severe Reactor Accident Analysis, Mon. p.m.

Fire Risk Assessment Methods, Tues. a.m.

Fire Phenomena in Safety Assessments, Tues. p.m.

Generic Aging Lessons Learned in the NPP License Renewal Process:
The Path Forward—Paper/Panel, Wed. a.m.

Nuclear Installations Safety: General, Wed. p.m.

Emerging Issues and Human Factors in Nuclear Facility Safety,
Thurs. a.m.

Physics, Modeling, and Risk Assessment, Thurs. a.m.

Monitoring and Regulatory Insights, Thurs. p.m.

Operations and Power (OPD)

Lessons Learned in the 10 CFR 52 New Plant Licensing Process:
A Status Report—Panel, Mon. p.m.

Economics and Financing for Nuclear Power Plants, Tues. a.m.

LWR Sustainability Program R&D Overview—Panel, Tues. p.m.

Operations and Power: General—I, Wed. a.m.

(Advances in Small and Medium-Sized Reactor Designs), Wed. p.m.

Operations and Power: General—II, Wed. p.m.

Standards Symposium, Wed. p.m.

Advanced/Gen-IV Reactors, Thurs. a.m.

Radiation Protection and Shielding (RPSD)

Current Topics in Radiation Protection Shielding—Roundtable, Mon. p.m.

Advances in High Precision Radiation Measurements, Tues. a.m.

Radiation Protection and Shielding: General, Wed. a.m.

Computational Resources, Wed. p.m.

Reactor Physics (RPD)

Design and Analysis for Plutonium and Minor Actinides
Transmutation—I, Mon. p.m.

Reactor Physics: General—I, Mon. p.m.

Nuclear Data Covariance: Evaluation, Processing, and Application—I,
Tues. a.m.

Reactor Analysis Methods—I, Tues. a.m.

Current Issues in LWR Core Design and Reactor Engineering Support—
Panel, Tues. a.m.

(Sensitivity and Uncertainty Methodologies in Nuclear Calculations—I),
Tues. p.m.

Advances in Nuclear Reactor Kinetics—I, Tues. p.m.

Reactor Physics Design, Validation, and Operating Experience—I,
Tues. p.m.

Design and Analysis for Plutonium and Minor Actinides
Transmutation—II, Wed. a.m.

Reactor Physics: General—II, Wed. a.m.

Design and Analysis for Plutonium and Minor Actinides
Transmutation—III, Wed. p.m.

Reactor Analysis Methods—II, Wed. p.m.

Advances in Small and Medium-Sized Reactor Designs, Wed. p.m.

Reactor Physics (RPD)

Advances in Nuclear Reactor Kinetics—II, Thurs. a.m.

Nuclear Data Covariance: Evaluation, Processing, and Application—II,
Thurs. a.m.

Design and Analysis for Plutonium and Minor Actinide
Transmutation—IV, Thurs. p.m.

Reactor Physics Design, Validation, and Operating Experience—II,
Thurs. p.m.

(Sensitivity and Uncertainty Methodologies in Nuclear Calculations—II),
Thurs. p.m.

Thermal Hydraulics (THD)

Next Generation Safety Analysis Code, Mon. p.m.

Thermal Hydraulics of Gas-Cooled Reactors—I, Mon. p.m.

General Thermal Hydraulics—I, Tues. a.m.

Computational Thermal Hydraulics—I, Tues. p.m.

Thermal Hydraulics of Gas-Cooled Reactors—II, Wed. a.m.

Thermal Hydraulics of Small Modular Reactors, Wed. p.m.

Experimental and Computational Two-Phase Flow, Wed. p.m.

General Thermal Hydraulics—II, Wed. p.m.

Computational Thermal Hydraulics—II, Thurs. a.m.

Young Members Group (YMG)

Hot Topics in Professional Development—Roundtable, Mon. p.m.

Mind the Gap: Mentoring Successes and Challenges—Panel, Thurs. a.m.

MARK YOUR CALENDARS!

2011 ANS Winter Meeting and Nuclear Technology Expo



**October 30–November 3, 2011
Washington, DC
Omni Shoreham Hotel**

**Visit the ANS home page www.ans.org
for future meetings and more!**

Condensed Schedule

ROOM	MONDAY, JUNE 27, 2011			TUESDAY, JUNE 28, 2011		
	8:30–11:30 a.m.	1:00–4:00 p.m.	4:00–6:00 p.m.	8:30–11:30 a.m.	1:00–4:00 p.m.	4:00–6:00 p.m.
Grand Ballroom	Opening Plenary: “Seizing the Opportunity: Nuclear’s Bright Future”		ANS President’s Special Session: “Fukushima Updates and Lessons Learned”			Special Session: The Accident at Fukushima Daiichi—Preliminary Investigations—Panel
Diplomat Ballroom 1		Highlights from PSA 2011—Panel		Fire Risk Assessment Methods	Fire Phenomena in Safety Assessments	
Diplomat Ballroom 2		Very Long-Term Dry Storage of Spent Nuclear Fuel—I—Panel		Very Long-Term Dry Storage of Spent Nuclear Fuel—II—Panel	Future of the Nuclear Fuel Cycle and Waste Management—Panel	
Diplomat Ballroom 3		Current Issues in Computational Methods—Roundtable “Monte Carlo Methods in Reactor Physics: Current Status and Future Prospects”		Transport Methods: General	Sensitivity and Uncertainty Methodologies in Nuclear Calculations—I	
Diplomat Ballroom 4		Severe Reactor Accident Analysis		Nuclear Fuels and Materials	Modeling and Simulation of Nuclear Fuels and Materials	
Diplomat Ballroom 5		Isotopes and Radiation: General ----- Current Topics in Radiation Protection and Shielding—Roundtable		Innovations in Radiation Detectors: New Designs, Improvements, and Applications	Impact of DOE-NEUP to Research Reactors and Nuclear Science Programs	
Regency Ballroom 1		Design and Analysis for Plutonium and Minor Actinides Transmutation—I		Nuclear Data Covariance: Evaluation, Processing, and Application—I	Advances in Nuclear Reactor Kinetics—I	
Regency Ballroom 2		Reactor Physics: General—I		Reactor Analysis Methods—I	Reactor Physics Design, Validation, and Operating Experience—I	
Regency Ballroom 3		Next Generation Safety Analysis Code		Data, Analysis, and Operations for Nuclear Criticality Safety—I	Data, Analysis, and Operations for Nuclear Criticality Safety—II	
Atlantic Ballroom 1		Lessons Learned in the 10 CFR 52 New Plant Licensing Process: A Status Report—Panel		Economics and Financing for Nuclear Power Plants ----- Current Issues in LWR Core Design and Reactor Engineering Support—Panel	LWR Sustainability Program R&D Overview—Panel	
Atlantic Ballroom 2		Research by U.S. DOE NEUP-Sponsored Students—I		Research by U.S. DOE NEUP-Sponsored Students—II	Research by U.S. DOE NEUP-Sponsored Students—III	
Atlantic Ballroom 3		Thermal Hydraulics of Gas-Cooled Reactors—I		General Thermal Hydraulics—I	Computational Thermal Hydraulics—I	
Room 212/213		Materials Science: General		Advances in High Precision Radiation Measurements		
Room 214		Hot Topics in Professional Development—Roundtable		DOE R&D Activities for Nuclear Power Instrumentation, Control, and Human-Machine Interface Technologies—Panel	Digital Upgrade Experience Implementing NRC ISG-06—Panel	

ROOM	WEDNESDAY, JUNE 29, 2011		THURSDAY, JUNE 30, 2011	
	8:30–11:30 a.m.	1:00–4:00 p.m.	8:30–11:30 a.m.	1:00–4:00 p.m.
Diplomat Ballroom 1	Generic Aging Lessons Learned in the NPP License Renewal Process: The Path Forward—Paper/Panel	Nuclear Installations Safety: General	Emerging Issues and Human Factors in Nuclear Facility Safety	Monitoring and Regulatory Insights
Diplomat Ballroom 2	Used Fuel Component Recycle Advanced Waste Forms and Storage—I	Used Fuel Component Recycle Advanced Waste Forms and Storage—II		
Diplomat Ballroom 3	Mathematical Modeling and Computational Methods	Computational Methods: General	Modeling and Simulation in Fuel Cycle Separations and Waste Form Development—I	Modeling and Simulation in Fuel Cycle Separations and Waste Form Development—II
Diplomat Ballroom 4	Thermal Physical Properties and Measurement Techniques for Nuclear Materials	Novel Instrumentation and Measurement Techniques	Physics, Modeling, and Risk Assessment	Environmental Sciences: General
Diplomat Ballroom 5	Proton and Ion Treatment of Cancer	Thermal Hydraulics of Small Modular Reactors ----- Experimental and Computational Two-Phase Flow	Mind the Gap: Mentoring Successes and Challenges—Panel	Best Practices in Interdisciplinary Safeguards and Nonproliferation Education—Papers/Panel
Regency Ballroom 1	Design and Analysis for Plutonium and Minor Actinides Transmutation—II	Design and Analysis for Plutonium and Minor Actinides Transmutation—III	Advances in Nuclear Reactor Kinetics—II	Design and Analysis for Plutonium and Minor Actinides Transmutation—IV
Regency Ballroom 2	Reactor Physics: General—II	Reactor Analysis Methods—II	Nuclear Data Covariance: Evaluation, Processing, and Application—II	Reactor Physics Design, Validation, and Operating Experience—II
Regency Ballroom 3	Proper Applications of Benchmarking in Criticality Safety	Advances in Small and Medium Sized Reactor Designs	Nuclear Criticality Safety Standards—Forum	Sensitivity and Uncertainty Methodologies in Nuclear Calculations—II
Atlantic Ballroom 1	Operations and Power: General—I	Operations and Power: General—II	Advanced/Gen-IV Reactors	
Atlantic Ballroom 2	Kent Hamlin Memorial Session on Training, Human Performance, and Work Force Development	Nuclear Communications: Getting It Right—Panel ----- Key Nuclear Communications Messages—Panel	Education and Training: General	
Atlantic Ballroom 3	Thermal Hydraulics of Gas-Cooled Reactors—II	General Thermal Hydraulics—II	Computational Thermal Hydraulics—II	
Room 212/213	Radiation Protection and Shielding: General	Computational Resources		
Room 214	SRS Plutonium Disposition Projects Update—Panel	Standards Symposium		

Technical Sessions by Day: Monday

MONDAY • JUNE 27, 2011

7:30 AM – 5:00 PM	MEETING REGISTRATION
8:00 AM – 10:00 AM	SPOUSE/GUEST HOSPITALITY
8:30 AM – 11:30 AM	2011 ANS ANNUAL MEETING: OPENING PLENARY “Seizing the Opportunity: Nuclear’s Bright Future”
8:30 AM – 12:30 PM	SPOUSE/GUEST TOUR: “Everglades Experience”
11:30 AM – 1:00 PM	OPERATIONS AND POWER DIVISION LUNCHEON
11:45 AM – 12:45 PM	GREEN BAG LUNCH: “Staffing an Exhibit”
1:00 PM – 4:00 PM	2011 ANS ANNUAL MEETING: TECHNICAL SESSIONS <ul style="list-style-type: none">• Highlights from PSA 2011—Panel• Very Long-Term Dry Storage of Spent Nuclear Fuel—I—Panel• Current Issues in Computational Methods—Roundtable “Monte Carlo Methods in Reactor Physics: Current Status and Future Prospects”• Severe Reactor Accident Analysis• Isotopes and Radiation: General• Current Topics in Radiation Protection and Shielding—Roundtable• Design and Analysis for Plutonium and Minor Actinides Transmutation—I• Reactor Physics: General—I• Next Generation Safety Analysis Code• Lessons Learned in the 10 CFR 52 New Plant Licensing Process: A Status Report—Panel• Research by U.S. DOE NEUP-Sponsored Students—I• Thermal Hydraulics of Gas-Cooled Reactors—I• Materials Science: General• Hot Topics in Professional Development—Roundtable
4:00 PM – 6:00 PM	ANS PRESIDENT’S SPECIAL SESSION “Fukushima Update and Lessons Learned”
6:45 PM – 10:00 PM	EVENING EVENT: “Reception and Dinner on the Biscayne Lady Yacht”

MONDAY, JUNE 27, 2011, 8:30 A.M.

Opening Plenary: “Seizing the Opportunity: Nuclear’s Bright Future.” *Chair:* Jim Ferland (*Westinghouse*)

Grand Ballroom

8:30 a.m.

OPENING REMARKS AND WELCOME:

- Joe Colvin (*President, American Nuclear Society*)

SPEAKERS:

- Jim Ferland (*Westinghouse Electric Company, President Americas Region*)
- Pete Lyons (*US Department of Energy, Assistant Secretary for Nuclear Energy*)
- Bill McCollum (*Tennessee Valley Authority, Chief Operating Officer*)
- Jim Miller (*Southern Nuclear Operating Company, Chairman, President and Chief Executive Officer*)
- William D. Magwood (*US Nuclear Regulatory Commission*)

PRESENTATION OF THE SMYTH AWARD

MONDAY, JUNE 27, 2011, 1:00 P.M.

Highlights from PSA 2011—Panel, sponsored by NISD.

Session Organizers: Dennis Henneke, Phillip Ellison (*GE-Hitachi*).

Chair: Dennis Henneke

Diplomat Ballroom 1

1:00 p.m.

PSA2011 celebrated the contribution of many individuals who through their insight, perseverance, and dedication have made the PSA Topical Meeting series technically engaging, informative, and very successful since the first meeting in 1978 in Newport Beach, California. Key participants from the recently concluded 12th PSA meeting in Wilmington, North Carolina, will discuss the primary highlights, insights, and themes from the topical meeting.

Included will be the prominent information from panel and paper sessions on human reliability, fire PSA, low power and shutdown PSA, seismic PSA, risk-informed applications, software reliability, regulatory and standards activities, accident and consequence analysis, computer codes, aging, transportation, common cause, as well as many others.

PANELISTS:

- Dennis Henneke (*GE-Hitachi*)
- Phillip Ellison (*GE-Hitachi*)
- Robert J. Budnitz (*LBNL*)
- One additional panelist to be determined.

Very Long-Term Dry Storage of Spent Nuclear Fuel—I—Panel,

sponsored by FCWMD. *Session Organizer:* Robert Einziger (*NRC*).

Chair: Robert Einziger

Diplomat Ballroom 2

1:00 p.m.

With the apparent demise of Yucca Mountain, it appears the Very Long-Term Dry Storage (VLTDS) of SNF may become a real possibility. NRC, DOE-NE, DOE-EM, NWTRB, utilities, and cask vendors are all taking actions to prepare for this potential eventuality. Since June 2009, a variety of meetings have been held to discuss the issue; as a result, a consortium has been formed to define the issue, determine studies that need to be done, and initiate those studies. NRC is responding to the Staff Requirements Memo (SRM) on the same topic, and NWTRB is preparing a white paper. Budgets of a number of organizations have been increased to work on this task. By the June 2011 Annual Meeting, there should be significant progress to report.

PANELISTS:

- Brady Hansen (*PNNL*)
- Michael Waters (*NRC*)
- John Kessler (*EPRI*)
- Andrew Kadak (*NWTRB*)

Current Issues in Computational Methods—Roundtable “Monte Carlo Methods in Reactor Physics: Current Status and Future Prospects,”

sponsored by MCD. *Session Organizer:* Anil Prinja (*Univ of New Mexico*). *Chair:* Forrest Brown (*LANL*)

Diplomat Ballroom 3

1:00 p.m.

PANELISTS:

- Forrest Brown (*LANL*)
- Kord Smith (*Studsвик Scandpower, Inc.*)
- John Wagner (*ORNL*)
- Jim Morel (*Texas A&M*)
- David Griesheimer (*BAPL*)

Severe Reactor Accident Analysis,

sponsored by NISD. *Session Organizer:* Dana Powers (*SNL*). *Chair:* Totju Totov (*ANL*)

Diplomat Ballroom 4

1:00 p.m.

Comparative View on High-Temperature Oxidation of Zirconium Alloys in Various Atmospheres, Martin Steinbrück (*KIT*)

Technical Sessions by Day: Monday

1:25 p.m.

Validation of MELCOR 1.8.6 Code Against LOFT LP-FP-2 Experiment, Jiri Duspiva (*NRI*)

1:50 p.m.

Simulation of Alumina and Corium KROTOS Steam Explosion Experiments with MC3D, Matjaž Leskovar, Mitja Urši (*Jožef Stefan Inst*)

Isotopes and Radiation: General, sponsored by IRD.

Session Organizer: Kenan Ünlü (*Penn State*). *Chair:* Stephen LaMont (*LANL*)

Diplomat Ballroom 5

1:00 p.m.

Evaluation and Verification of Durability and Efficiency of Components of Photon Assisted Radioisotopic Batteries, E. V. Steinfelds, J. S. Tulenko (*Univ of Florida*)

1:25 p.m.

Passively Cooled, Low-Cost, Aqueous Homogeneous LEU Reactor for Mo-99 Production, Russell M. Ball (*Ball Systems Co*), Douglas E. Baum (*nCore, Inc*)

1:50 p.m.

Neutron Beam Characterization of the Neutron Beam Facilities at the USGS TRIGA Reactor, Sarah W. Morgan, Jeffrey C. King (*CSM*)

Current Topics in Radiation Protection and Shielding—Roundtable,

sponsored by RPSD. *Session Organizer:* Robert Hayes (*Washington TRU Solutions*). *Chair:* Erik F. Shores (*LANL*)

Diplomat Ballroom 5

2:20 p.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.

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

Design and Analysis for Plutonium and Minor Actinides

Transmutation—I, sponsored by RPD; cosponsored by FCWMD.

Session Organizer: Mark D. DeHart (*INL*), Ivan G. Maldonado (*UT*), Fausto Franceschini (*Westinghouse*). *Cochairs:* Mark D. Dehart (*INL*), Ivan Maldonado (*Univ of Tennessee*)

Regency Ballroom 1

1:00 p.m.

Minor Actinides in Discharged Fuel of Alternative Thorium Cycles, L. Michael Huang, Bojan Petrovic (*Georgia Tech*), Michael Wenner, Fausto Franceschini (*Westinghouse*)

1:25 p.m.

Potential of Silicon Carbide Cladding to Extend Burnup of Pu-Th Mixed Oxide Fuel, Eugene Shwageraus (*MIT*), Herbert Feinroth (*Ceramic Tubular Products*)

1:50 p.m.

Inert Matrix Fuel for LWRs: Preliminary Safety Assessment, B. Vezzoni, A. Rineiski, F. Gabrielli, V. Romanello (*KIT*), O. Schitthelm (*Fzj*), D. F. da Cruz (*NRG*), C. Growe (*NNL*)

2:15 p.m.

Transmutation of Minor Actinides in a Lanthanide Matrix, B. Hyland (*AECL*), G. DelCul (*ORNL*), E. D. Collins, R. J. Ellis (*ORNL*), M. Magill (*AECL*)

2:40 p.m.

Physics Analyses of an Annular PWR Fuel Pellet Concept for Minor Actinide Utilization, Ronald J. Ellis, Guillermo (Bill) DelCul, Emory D. Collins (*ORNL*)

3:05 p.m.

Fully Ceramic Microencapsulated Fuels: A Transformational Technology for Present and Next Generation Reactors—Properties and Fabrication of FCM Fuel, L. L. Snead, K. A. Terrani (*ORNL*), F. Venneri (*Logos Nuclear Systems*), Y. Kim (*UNIST*), J. E. Tulenko (*Univ of Florida, Gainesville*), C. W. Forsberg (*MIT*), P. F. Peterson (*Univ of California, Berkeley*), E. J. Lahoda (*Westinghouse*)

3:30 p.m.

Fully Ceramic Microencapsulated Fuels: A Transformational Technology for Present and Next Generation Reactors—Preliminary Analysis of FCM Fuel Reactor Operation, F. Venneri (*Logos Nuclear Systems*), Y. Kim (*UNIST*), L. L. Snead, K. A. Terrani (*ORNL*), A. Ougouag (*INL*), J. E. Tulenko (*Univ of Florida, Gainesville*), C. W. Forsberg (*MIT*), P. F. Peterson (*Univ of California, Berkeley*), E. J. Lahoda (*Westinghouse*)

Reactor Physics: General—I, sponsored by RPD.

Session Organizer: Fausto Franceschini (*Westinghouse*).

Cochairs: Alberto Talamo (*ANL*), Benoit Forget (*MIT*)

Regency Ballroom 2

1:00 p.m.

High Burnup PWR Core Design with Silicon Carbide Cladding, Jacob P. Dobisesky, Joshua G. Richard, Edward E. Pilat, Mujid S. Kazimi (*MIT*)

1:25 p.m.

An Evolutionary Zr-U Alloy Fuel for LWR Power Uprate, Jim Malone, Aaron Totemeier, Alexei Morozov (*Lightbridge Corp*)

1:50 p.m.

Estimation of Antineutrino Signature of a Small Modular Reactor (SMR) Loaded with UO₂ and MOX Fuel, Elanchezhian Somasundaram, Alexey I. Soldatov, Todd S. Palmer (*Oregon State Univ*)

2:15 p.m.

A Cost-Effective U-235 Once-Through Startup Mode for SFRs, Tingzhou Fei, E. Shwageraus, M. J. Driscoll (*MIT*)

2:40 p.m.

Evaluation of High-Temperature Gas-Cooled Reactor Safety Characteristics for Use in Coupled Simulations, Avery A. Bingham, Javier Ortensi (*INL*)

3:05 p.m.

Distribution of Neutrons in a Cold Lucite Moderator, Rene Sanchez, David Hayes, Travis Grove, Jesson Hutchinson, William Myers (*LANL*)

3:30 p.m.

Experiments with the Dragon Machine, Richard E. Malenfant (*LANL, retired*)

Technical Sessions by Day: Monday

Next Generation Safety Analysis Code, sponsored by THD.

Cochairs: Xiaodong Sun (*Ohio State*), David Aumiller (*Bettis Lab*)

Regency Ballroom 3

1:00 p.m.

Current Status of Safety Analysis Code in KAERI and Prospects of Next Generation Code, Bub Dong Chung, Jae Jun Jeong, Won Pil Baek (*KAERI*), invited

1:20 p.m.

Framework for Applying a Next-Generation Safety Analysis Code to Plant Life Extension Decision Making, R. W. Youngblood, R. R. Nourgaliev, D. L. Kelly, C. L. Smith, T-N. Dinh (*INL*), invited

1:40 p.m.

A System Simulation Code to Support the Safety Case in the LWR Life Extension: Selection, Development, and Testing of Code Architecture and Solution Algorithms, T-N. Dinh, R. R. Nourgaliev, R. W. Youngblood (*INL*), invited

2:00 p.m.

Method and Tool Development to Support Systematic Quantification of Uncertainties, Tunc Aldemir, Umit Catalyurek, Richard Denning, Carol Smidts, Xiaodong Sun, Alper Yilmaz (*Ohio State*), invited

2:20 p.m.

Perspective of Next Generation Safety Analysis Code for LWRs, Fumio Kasahara, Yasuhiro Masuhara, Tadashi Mori, Atsushi Ui (*JNES*), invited

2:40 p.m.

Thermal Hydraulic Computer Code Uncertainty Quantification Using Quantified PIRT, H. Luo, J. Luijstens, Q. Wu, (*Oregon State Univ*), V. A. Mousseau (*INL*)

3:00 p.m.

Quantitative Phenomena Identification and Ranking Table (QPIRT) for Reactor Safety Analysis, Joseph Yurko, Jacopo Buongiorno (*MIT*)

3:20 p.m.

Core and System Analysis Integrated Code Platform Developed in China, Yanhua Yang, Yixue Chen, Hao Zhang (*SNPSDC*), invited

Lessons Learned in the 10 CFR 52 New Plant Licensing Process:

A Status Report—Panel, sponsored by OPD.

Session Organizer: Sandra M. Sloan (*AREVA*). *Chair:* Alan Levin (*AREVA*)

Atlantic Ballroom 1

1:00 p.m.

This session will feature panelists representing various stakeholders in the new plant licensing process under 10 CFR 52. The discussion will focus on challenges, both technical and process oriented, and the resulting resolution, from an industry as well a regulatory perspective. The timing of the session, in mid-2011, will be such that according to current projections, several design certification and combined license reviews should be near completion.

PANELISTS:

- Greg Gibson (*UniStar Nuclear Energy*)
- Peter Hastings (*Duke Energy*)
- David Matthews (*NRC*)
- Amy Monroe (*SCANA*)

Research by U.S. DOE NEUP-Sponsored Students—I,

sponsored by ETWDD. *Session Organizer:* Marsha Lambregts (*INL*).

Cochairs: Marsha Lambregts, Jenna Payne, Greg Bala (*INL*)

Atlantic Ballroom 2

1:00 p.m.

Extraction Chromatographic Studies of Rf Homologs Using Crown Ether Based Resins, Megan E. Bennett, John D. Despotopoulos (*UNLV*), Roger A. Henderson, Dawn A. Shaughnessy (*LLNL*), Ralf Sudowe (*UNLV*)

1:20 p.m.

Crystal Plasticity Modeling of Radiation Damage in bcc Structural Materials, Anirban Patra, David L. McDowell (*Georgia Tech*)

1:40 p.m.

Load Ratio Effects on Time-Dependent Fatigue Crack Propagation Behavior of Alloy 617 and 230, Shawoon K. Roy, Longzhou Ma (*UNLV*)

2:00 p.m.

Atomic-Scale Modeling of the Effects of Irradiation on the Optical Properties of Silica Glass Fibers, Harish Govindarajan, Rohan Mishra, Wolfgang Windl (*Ohio State*)

2:20 p.m.

Experimental Setups Designed and Built by Graduate Students for Undergraduate Student Use in Nuclear Engineering Department of Hacettepe University, Veda Duman, Sule Ergün (*Hacettepe Univ*)

2:40 p.m.

Development of a Method for In Situ Alpha Radiolysis Studies, Jeremy Pearson, Oliver Jan, A. J. Shaka, George Miller, Philip Dennison, Mikael Nilsson (*Univ of California, Irvine*)

3:00 p.m.

Graph-Based Modeling for Glove-Box Deployed Robots, Brian O'Neil, Mitch Pryor, Sheldon Landsberger (*Univ of Texas, Austin*)

3:20 p.m.

Design and Construction of a Scaled Experimental Reactor Cavity Cooling System with Water, D. D. Lisowski, R. M. Scherrer, M. H. Anderson, M. L. Corradini (*Univ of Wisconsin, Madison*)

3:40 p.m.

Precursor Derived Nanostructured Si-C-X Materials for Nuclear Applications, Shelly Arreguin, Raj Bordia (*Univ of Washington*)

Thermal Hydraulics of Gas-Cooled Reactors—I, sponsored by THD.

Cochairs: Jeffrey Lane (*Bettis Lab*), Paolo Ferroni (*Westinghouse*)

Atlantic Ballroom 3

1:00 p.m.

Experimental Study of Bypass Flow in Near Wall Gaps of a Pebble Bed Reactor, Noushin Amini, Elvis E. Dominguez-Ontiveros, Yassin A. Hassan (*Texas A&M*)

1:25 p.m.

Guillotine Break in a VHTR Lower Plenum Air Ingress Scenario, Jessica Hartley, Nathaniel Salpeter, Yassin Hassan (*Texas A&M*)

1:50 p.m.

Effects of Pressure on Density Difference Stratified Flow (CFD Model of a DCC Event in a HTGR), Jill Smith, Brian Woods (*Oregon State Univ*)

Technical Sessions by Day: Monday/Tuesday

2:15 p.m.

Laminarization in Flow Paths Between Cylinders with Local Heating, R. Brian Jackson, Brian G. Woods (*Oregon State Univ*)

2:40 p.m.

Experiments in High-Temperature Helium Facility: Experimental Data Reduction, Uncertainty Analysis, and Thermal-Hydraulic Correlations, Sai K. Mylavarapu, Xiaodong Sun, Richard E. Glosup, Richard N. Christensen (*Ohio State*), Brian Castle, Mike W. Patterson (*INL*)

3:05 p.m.

Heat Transfer Characteristics for Pebble Beds in HTGR, Min-Tsung Kao, Yu-Hsin Tung, Yuh-Ming Ferng, Ching-Chang Chieng (*Natl Tsing Hua Univ*), Minking Chyu (*Univ of Pittsburgh*)

Materials Science: General, sponsored by MSTD. *Session Organizer:* Ken Geelhood (*PNNL*). *Chair:* Rita Baranwal (*Westinghouse*)

Room 212/213

1:00 p.m.

Explosive Bonding of Dissimilar Alloys of Mg and Al, Y. B. Yan (*Nanjing Univ Sci Technol*), Z. W. Zhang (*Nanjing Univ Sci Technol, Auburn Univ*), W. Shen, B. A. Chin (*Auburn Univ*)

1:25 p.m.

Ferroelectric Changes in Neutron Irradiated Lead Zirconate Titanate, Joseph Graham, Sheldon Landsberger (*Univ of Texas, Austin*), Geoff Brennecka (*SNL*)

1:50 p.m.

Mechanical Property Effects on Anisotropic Effective Thermal Conductivity in Vacuum, Daniel Garrett, Jingwen Mo, Heng Ban (*Utah State Univ*)

2:15 p.m.

The Effect of Thermal Aging on Hardness of Stainless Steel Welds, L. J. Ayers, T. R. Lucas, R. G. Ballinger (*MIT*)

2:40 p.m.

Hydrogen Behaviors in Lead-Bismuth Eutectic (LBE) System, J. Zhang, P. R. McClure (*LANL*), T. J. Trapp (*Hyperion Power Generation*)

3:05 p.m.

Modeling Characterization of Time-Dependent Fatigue Crack Propagation in Ni-Based Solid-Solution-Strengthened Superalloys, Longzhou Ma, Shawoon K. Roy (*UNLV*)

Hot Topics in Professional Development—Roundtable, sponsored by YMG. *Chair:* Peter Caraccappa (*RPI*)

Room 214

1:00 p.m.

Everyone is invited to make a short, informal presentation on current and emerging topics in professional development, including new ideas and important lessons. Time will be available on a first-come/first-serve basis, with a strong desire to promote discussion and information interchange.

MONDAY, JUNE 27, 2011, 4:00 P.M.

ANS President's Special Session: "Fukushima Updates and Lessons Learned"

Grand Ballroom

4:00 p.m.

This session will focus on the latest update and lessons learned in the aftermath of the earthquake and tsunami in Japan and the impact on all nuclear facilities in Japan, with particular emphasis on the Fukushima Daiichi Plants. Speakers from industry, government, and Japan will focus on the events sequence, major issues, challenges, media interactions, and lessons learned to date.

WELCOME/INTRODUCTORY REMARKS:

Ted Quinn (*Past President, American Nuclear Society*)

MODERATOR:

Joe Colvin (*President, American Nuclear Society*)

PANELISTS:

- Akira Omoto (*Commissioner, Japan Atomic Energy Commission—Japan*)
- Dale Klein (*University of Texas, Austin*)
- Michael Weber (*U.S. Nuclear Regulatory Commission*)

TUESDAY • JUNE 28, 2011

7:30 AM – 5:00 PM

MEETING REGISTRATION

8:00 AM – 10:00 AM

SPOUSE/GUEST HOSPITALITY

8:30 AM – 11:30 AM

2011 ANS ANNUAL MEETING: TECHNICAL SESSIONS

- Fire Risk Assessment Methods
- Very Long-Term Dry Storage of Spent Nuclear Fuel—II—Panel
- Transport Methods: General
- Nuclear Fuels and Materials
- Innovations in Radiation Detectors: New Designs, Improvements, and Applications
- Nuclear Data Covariance: Evaluation, Processing, and Application—I
- Reactor Analysis Methods—I
- Data, Analysis, and Operations for Nuclear Criticality Safety—I
- Economics and Financing for Nuclear Power Plants
- Current Issues in LWR Core Design and Reactor Engineering Support—Panel
- Research by U.S. DOE NEUP-Sponsored Students—II
- General Thermal Hydraulics—I
- Advances in High Precision Radiation Measurements
- DOE R&D Activities for Nuclear Power Instrumentation, Control, and Human-Machine Interface Technologies—Panel

10:00 AM – 3:45 PM

SPOUSE/GUEST TOUR: "Shopping at Sawgrass Mills"

11:30 AM – 1:00 PM

ANS HONORS AND AWARDS LUNCHEON

1:00 PM – 4:00 PM

2011 ANS ANNUAL MEETING: TECHNICAL SESSIONS

- Fire Phenomena in Safety Assessments
- Future of the Nuclear Fuel Cycle and Waste Management—Panel
- Sensitivity and Uncertainty Methodologies in Nuclear Calculations—I
- Modeling and Simulation of Nuclear Fuels and Materials
- Impact of DOE-NEUP to Research Reactors and Nuclear Science Programs
- Advances in Nuclear Reactor Kinetics—I
- Reactor Physics Design, Validation, and Operating Experience—I
- Data, Analysis, and Operations for Nuclear Criticality Safety—II
- LWR Sustainability Program R&D Overview—Panel
- Research by U.S. DOE NEUP-Sponsored Students—III
- Computational Thermal Hydraulics—I
- Digital Upgrade Experience Implementing NRC ISG-06—Panel

4:00 PM – 6:00 PM

SPECIAL SESSION: "The Accident at Fukushima Daiichi—Preliminary Investigations—Panel"

6:30 PM – 8:30 PM

RECEPTION FOR ALUMNI AND FRIENDS OF THE UNIVERSITY OF TENNESSEE NUCLEAR ENGINEERING DEPARTMENT

6:30 PM – 8:30 PM

SOCIAL MEDIA GROUP GATHERING

Technical Sessions by Day: Tuesday

TUESDAY, JUNE 28, 2011, 8:30 A.M.

Fire Risk Assessment Methods, sponsored by NISD.

Session Organizer: Dana Powers (SNL). *Cochairs:* Mark Salley (NRC), Marina Rewekamp (GRS)

Diplomat Ballroom 1

8:30 a.m.

Knowledge Management for Fire Protection and Fire Research at the U.S. Nuclear Regulatory Commission, David Stroup, Hugh "Roy" Woods, Felix Gonzalez, Gabriel Taylor (NRC)

8:55 a.m.

Advances in Fire Modeling for Nuclear Power Plant Applications, David Stroup (NRC), Kevin McGrattan (NIST), Francisco Joglar (Science Applications Int Corp)

9:20 a.m.

Ongoing Methods Development Activities in Fire PRA—A Presentation Summary, Steven P. Nowlen (SNL), J. S. Hyslop (NRC)

9:45 a.m.

Rule-Based Approach to Determine Component Failure Modes in Fire PSA, Dae Il Kang, Sang Hoon Han, Joon-Eon Yang (KAERI)

10:10 a.m.

Fire PRA for All Plant Operational States—Methodology and Enhanced Database, Marina Roewekamp (GRS mbH), Heinz Peter Berg (BfS)

Very Long-Term Dry Storage of Spent Nuclear Fuel—II—Panel

sponsored by FCWMD. *Session Organizer:* Robert Einziger (NRC).

Chair: Robert Einziger

Diplomat Ballroom 2

8:30 a.m.

With the apparent demise of Yucca Mountain, it appears the Very Long-Term Dry Storage (VLTDS) of SNF may become a real possibility. NRC, DOE-NE, DOE-EM, NWTRB, utilities, and cask vendors are all taking actions to prepare for this potential eventuality.

Since June 2009, a variety of meetings have been held to discuss the issue; as a result, a consortium has been formed to define the issue, determine studies that need to be done, and initiate those studies. NRC is responding to the Staff Requirements Memo (SRM) on the same topic, and NWTRB is preparing a white paper. The budgets of a number of organizations have been increased to work on this task. By the June 2011 Annual Meeting, there should be significant progress to report.

PANELISTS:

- Ruth Weiner (SNL)
- Brett Carlson (INL)
- Lumin Wang (Univ of Michigan)
- Bob Sindelar (SRL)

Transport Methods: General, sponsored by MCD.

Session Organizer: Patrick Brantley (LLNL). *Chair:* John Wagner (ORNL)

Diplomat Ballroom 3

8:30 a.m.

A Nonlinear Energy Acceleration Method, Lei Zhu, Benoit Forget (MIT)

8:55 a.m.

Parallelization of the Red-Black Algorithm on Solving the Second-Order PN Transport Equation with the Hybrid Finite Element Method, Yaqi Wang, Cristian Rabiti, Giuseppe Palmiotti (INL)

9:20 a.m.

A Synthesized Fleck Factor for the Implicit Monte Carlo Equations, Allan B. Wollaber (LANL)

9:45 a.m.

Evaluating the Efficiency of Estimating Numerous Monte Carlo Tallies, Brian C. Kiedrowski (LANL), Ahmad Ibrahim (Univ of Wisconsin, Madison)

10:10 a.m.

Under-Prediction of Localized Tally Uncertainties in Monte Carlo Eigenvalue Calculations, Brenden Mervin (Univ of Tennessee), Scott Mosher, John Wagner (ORNL), Ivan Maldonado (Univ of Tennessee)

10:35 a.m.

Chord Length Sampling in Stochastic Media Packed with Poly-Sized Spheres, Chao Liang, Wei Ji (RPI)

11:00 a.m.

Application of Principal Component Analysis to Uncertainty Propagation in Radiation Transport, Michael E. Rising (Univ of New Mexico), Erin D. Fichtl (LANL), Anil K. Prinja (Univ of New Mexico)

Nuclear Fuels and Materials, sponsored by MSTD.

Session Organizer: Ken Geelhood (PNNL). *Chair:* Ken Geelhood

Diplomat Ballroom 4

8:30 a.m.

Diffusion Mechanisms and Paths During Sintering of Nonstoichiometric Urania, D. D. Byler (LANL), J. B. Henderson (Netzsch Instruments), K. J. McClellan, A. T. Nelson (LANL)

8:55 a.m.

Examination of Individual Compact Burnup for the AGR-1 TRISO Fuel Experiment Using Gamma Spectrometry, J. M. Harp, J. W. Sterbentz, P. A. Demkowicz, P. L. Winston, R. P. Lind (INL)

9:20 a.m.

Microstructural Characterization of Uranium Oxide, Erik Luther, Carl Necker, Bogdan Mihaila, Pallas Papin, Dennis Guidry (LANL)

9:45 a.m.

Development of Interatomic Potentials to Investigate ThO₂-Based Mixed Oxide Fuels, R. K. Behera, C. S. Deo (Georgia Tech)

10:10 a.m.

Study of the U-Pu-O system for Gen-IV Nuclear Fuels, Thibaut Truphemus, Renaud C. Belin (CEA, Cadarache), Jacques Rogez (IM2NP)

10:35 a.m.

Alternative Forming Fluids for TRISO Fuel Kernel Production, M. Baker, J. King, B. Gorman, D. Marshall (CSM)

11:00 a.m.

Thermodynamic Properties of UO₂, I. I. Al-Qasir, A. I. Hawari (NCSU)

Technical Sessions by Day: Tuesday

Innovations in Radiation Detectors: New Designs, Improvements, and Applications, sponsored by IRD; cosponsored by BMD.

Session Organizer: Kenan Ünlü (*Penn State Univ*). *Chair:* Igor Jovanovic (*Penn State*)

Diplomat Ballroom 5

8:30 a.m.

A Gadolinium Doped Superlattice GaN Schottky Diode for Neutron Detection, Jinghui Wang, Praneeth Kandlakunta, Thomas F. Kent, John Carlin, Daniel R. Hoy, Roberto C. Myers, Lei Cao (*Ohio State*)

8:55 a.m.

Graphene-Based Advanced Detector Concepts, M. Brener (*Penn State*), A. Patil (*Purdue Univ*), M. Foxe (*Penn State*), C. Roecker, J. Boguski, I. Childres, Y. Chen (*Purdue Univ*), Igor Jovanovic (*Penn State*)

9:20 a.m.

Viability of Using a Dense Plasma Focus Device for Shipping Container Interrogation, Raymond Keegan, Francis Tsang (*DOE Remote Sensing Lab*), Chris Hagen (*National Security Technol LLC*), Robert O'Brien, Daniel Lowe (*UNLV*)

9:45 a.m.

Nuclear Ionization Quenching Measurement in a Dual-Phase Argon Detector, M. Foxe (*Penn State/LLNL*), A. Bernstein, C. Hagmann (*LLNL*), T. Joshi (*Univ of California, Berkeley/LLNL*), K. Kazkaz, S. Sangiorgio (*LLNL*), I. Jovanovic (*Penn State*)

10:10 a.m.

An Automated Measurement of Burnup Credit Using PLS, Sheldon Landsberger, Kenneth Dayman (*Univ of Texas, Austin*), Christopher Orton (*PNNL*)

10:35 a.m.

Testing NORM Discriminating Energy Windowing Algorithms, Hirotatsu Armstrong, Erich A. Schneider, Gregory G. Thoreson (*Univ of Texas, Austin*)

Nuclear Data Covariance: Evaluation, Processing, and Application—I, sponsored by RPD; cosponsored by MCD. *Session Organizers:* Luiz C. Leal (*ORNL*), Gerardo Aliberti (*ANL*). *Cochairs:* Luiz Leal, Gerardo Aliberti

Regency Ballroom 1

8:30 a.m.

Processing ENDF Covariance Data with NJOY, A. C. Kahler, R. E. MacFarlane (*LANL*), invited

8:50 a.m.

AFCI-2.0 Library of Neutron Cross Section Covariances, M. Herman, P. Oblozinsky, C. Mattoon, M. Pigni, S. Hoblit, S. F. Mughabghab, A. Sonzogni (*BNL*), P. Talou, M. B. Chadwick, G. M. Hale, A. C. Kahler, T. Kawano, R. C. Little, P. G. Young (*LANL*), invited

9:10 a.m.

Cross-Section Covariance Data Processing with the AMPX Module PUFF-IV, D. Wiarda, L. C. Leal, M. E. Dunn (*ORNL*), invited

9:30 a.m.

Compilation, Evaluation, and Dissemination of Covariances in Microscopic Nuclear Reaction Data, Naohiko Otsuka, Roberto Capote, Viktor Zerkin (*IAEA*), invited

9:50 a.m.

Covariances for Light-Element Reactions in ENDF/B-VII.1, G. M. Hale (*LANL*), invited

10:10 a.m.

Evaluation of ^{23}Na Neutron Cross Sections and Covariances Using Differential and Integral Experiments, Pascal Archier, Gilles Noguère, Cyrille De Saint Jean, Jean Tommasi (*CEA, Cadarache*)

10:30 a.m.

Processing and Testing New ^{240}Pu Resolved Resonance and Covariance Evaluation, Vladimir Sobes (*MIT*), Luiz Leal, Herve Derrien, Doro Wiarda, Don Mueller (*ORNL*), Benoit Forget (*MIT*)

10:50 a.m.

Validation of Nuclear Data with Variances for Activation-Transmutation Processes, J-Ch. Sublet, L. W. Packer (*CCFE*), invited

Reactor Analysis Methods—I, sponsored by RPD; cosponsored by MCD. *Session Organizer:* Fausto Franceschini (*Westinghouse*).

Cochairs: Bojan Petrovic (*Georgia Tech*), Baocheng Zhang (*Westinghouse*)

Regency Ballroom 2

8:30 a.m.

Gaussian Process Approach for Global Variance Reduction, Qiong Zhang, Hany S. Abdel-Khalik (*NCSU*)

8:55 a.m.

Convergence Analysis of MOC with Large Negative Self-Scattering Cross Section, Masato Tabuchi, Hiroaki Tagawa (*Nuclear Engineering Ltd*), Akio Yamamoto (*Nagoya Univ*), Masahiro Tatsumi (*Nuclear Fuel Industries Ltd*)

9:20 a.m.

Verification of Multigroup Transport Computation with Angle-Dependent Total Cross Section by the Method of Manufactured Solutions, Jong Hyuck Won, Nam Zin Cho (*KAIST*)

9:45 a.m.

A Derivation of Discontinuity Factor for Angular Flux in Integro-Differential Transport Equation, Akio Yamamoto, Tomohiro Endo (*Nagoya Univ*), Yung-An Chao (*Shanghai Jiao Tong Univ, Westinghouse*)

10:10 a.m.

Hybrid Monte Carlo–Deterministic Approach for Global Variance Reduction, Hany Abdel-Khalik, Qiong Zhang (*NCSU*)

10:35 a.m.

Recent Advances in Monte Carlo Burnup Calculations for PWR Used Fuel Libraries, Holly R. Trellue, Michael L. Fensin (*LANL*)

Data, Analysis, and Operations for Nuclear Criticality Safety—I, sponsored by NCSD. *Session Organizer:* Larry L. Wetzel (*Babcock & Wilcox-NOG*). *Chair:* Sandra Larson (*Nuclear Safety Assoc*)

Regency Ballroom 3

8:30 a.m.

Influence of the Density Law on Various Fissile Single Unit and Array Storage Methods, Song T. Huang (*LLNL*)

8:55 a.m.

Optimum UO_2 Particle Size Determination Using GEMER Monte Carlo Code, James F. DeGolyer, Davoud A. Eghbali (*GNF*)

Technical Sessions by Day: Tuesday

9:20 a.m.

The Los Alamos National Laboratory Criticality Safety Information System, Thomas H. Jones (*LANL*)

9:45 a.m.

MCNP5-1.60 Release and Verification, F. B. Brown, B. C. Kiedrowski, J. S. Bull (*LANL*), M. A. Gonzales (*Univ of New Mexico*), N. A. Gibson (*MIT*)

10:10 a.m.

Inadvertent Accumulation Prevention Program at the Y-12 National Security Complex, Sandi Larson (*Nuclear Safety Associates*), Cynthia Gunn, Bev Lomax (*B&W Y-12*)

Economics and Financing for Nuclear Power Plants, sponsored by OPD. *Chair:* Thomas Remick (*SCE*)

Atlantic Ballroom 1

8:30 a.m.

A Reliability Impact Analysis of Extended Power Up-Rates at U.S. Boiling Water Reactors, Brenden Heidrich (*Penn State Univ*)

8:55 a.m.

Cost and Fuel Consumption of Gas, Wind, and Nuclear Generation, George S. Taylor (*Palmetto Energy Research*)

9:20 a.m.

An Assessment of Fuel Cycle Cost Sensitivity to Cycle Length and Number of Batches, Rodney Busquim e Silva, Mujid S. Kazimi, Edward E. Pilat (*MIT*)

9:45 a.m.

Break-Even Power Production in a Supercritical CO₂ Brayton Cycle, Steven A. Wright, Tom Conboy (*SNL*), Robert L. Fuller (*Barber Nichols Inc*)

Current Issues in LWR Core Design and Reactor Engineering Support—Panel, sponsored by RPD.

Session Organizer: David S. Orr (*Duke Energy*).

Cochairs: David S. Orr (*Duke Energy*), Moussa Mahgerefteh (*Exelon*)

Atlantic Ballroom 1

10:15 a.m.

Panelists invited primarily from utilities will discuss current core design capabilities, recent operating experience, and methods for addressing issues impacting core designs. Specific topics may include INPO SOER 96-02, INPO SOER 03-02, fuel performance (cladding failures, crud-induced power shift, distinctive crud pattern, and Zero-by-Ten results), management of competing core design interests (fuel cost, operating margin), refueling outage length and cycle length impacts to core design, multicycle optimization strategies, power uprate strategies or experience, and new fuel design implementation strategies or experience.

PANELISTS:

- Robb Borland (*FirstEnergy Nuclear Operating Co*)
- Jim Lemons (*TVA*)
- Charles Rombough (*CTR Technical Services*)
- Tom Psuik (*Dominion*)
- Phil Hoffspiegel (*APS*)

NOTE: This session will immediately follow the preceding session, which will begin at 8:30 a.m.

Research by U.S. DOE NEUP-Sponsored Students—II,

sponsored by ETWDD. *Session Organizer:* Marsha Lambregts (*INL*).
Cochairs: Marsha Lambregts, Jenna Payne, Greg Bala (*INL*)

Atlantic Ballroom 2

8:30 a.m.

Cesium and Silver Diffusion in SiC for TRISO Applications, Tyler Gerczak, Todd Allen (*Univ of Wisconsin, Madison*), Zihua Zhu (*PNNL*)

8:50 a.m.

The JFNK Method for the Solution of the K-Eigenvalue Transport Problem in Tetrahedral Geometry, Sebastian Schunert (*NCSU*), Rodolfo M. Ferrer (*INL*), Daniel F. Gill (*Penn State*), Yousry Y. Azmy (*NCSU*)

9:10 a.m.

Rapid Prototyping PET Phantoms for Partial Volume Correction, Matthew M. Mille, X. George Xu (*RPI*), Brian E. Zimmerman (*NIST*)

9:30 a.m.

Studies of Deteriorated Heat Transfer in Prismatic Cores Stemming from Irradiation-Induced Geometry Distortion, Bradley Heath, Jariullah Safi, Isadore Silver, Brian G. Williams (*Idaho State Univ*), Richard R. Schultz, Donald M. McEligot (*INL*), Glenn E. McCreery

9:50 a.m.

An Isotropic Bimodulus Constitutive Model for Nuclear Graphite, Christopher James, Stephen F. Duffy (*Cleveland State Univ*)

10:10 a.m.

Ab-initio Calculation of Defect Energetics and Electronic Structure in 4H-SiC, Ashutosh Kumar, Oscar D. Restrepo, Wolfgang Windl (*Ohio State*)

10:30 a.m.

Dislocation Bias Calculations Using a Combined Finite-Element Rate-Theory Approach, Dariush Seif, Nasr M. Ghoniem (*UCLA*)

10:50 a.m.

Pebble Bed Reactor Depletion Analysis with Multiple Fuel Types, Anselmo T. Cisneros, Ehud Greenspan, Per F. Peterson (*Univ of California, Berkeley*)

11:10 a.m.

Finding Minimum Energy States of Hydrogen-Vacancy Clusters in Iron, Erin Hayward, Chaitanya Deo (*Georgia Tech*)

General Thermal Hydraulics—I, sponsored by THD.

Cochairs: Steven Arndt (*NRC*), John C. Luxat (*McMaster Univ*)

Atlantic Ballroom 3

8:30 a.m.

TRACE Assessment for Application to Anticipated Operational Occurrences in Boiling Water Reactors, S. Vasavada, S. Choi, M. Zavisca, M. Khatib-Rahbar (*Energy Research Inx*), J. Staudenmeier, N. Hudson (*NRC*)

8:55 a.m.

TRACE Code Validation against ISP-15 FIX-II LOCA Blowdown and Pump Trip Heat Experiment, Lukasz Sokolowski, Tomasz Kozlowski (*KTH*)

Technical Sessions by Day: Tuesday

9:20 a.m.

Inadvertent Actuation of the PRHR System at the OSU APEX AP1000 Test Facility, J. Luitjens, H. Luo, Q. Wu (*Oregon State Univ*), R. Wright (*Westinghouse*)

9:45 a.m.

Mixing Modeling Analysis for SRS Salt Waste Disposition, Si Y. Lee (*SRNL*)

10:10 a.m.

Predicting the Onset of Dynamic Instability of a Cylindrical Plate Under Axial Flow Conditions, W. R. Marcum, B. G. Woods (*Oregon State Univ*)

10:35 a.m.

Comparison of Thermal-Hydraulic Results from RELAP5-3D/ATHENA and ANSYS/CFX, Juan J. Carbajo, Joel McDuffee, A. Louis Qualls (*ORNL*)

11:00 a.m.

Study of Water Discharge Process into a Countercurrent Steam Flow in a Vertical Plugged Tube, A. V. Morozov, O. V. Remizov, A. A. Tsyganok (*IPPE–Russia*)

Advances in High Precision Radiation Measurements, sponsored by RPSD. *Session Organizer:* Eric Burgett (*ISU*). *Chair:* Tony Hill (*INL*)

Room 212/213

8:30 a.m.

The Fission Time Projection Chamber Project, T. Hill (*INL*)

8:50 a.m.

Recent Data Results from the Neutron Induced Fission Fragment Tracking Experiment, Lucas Snyder (*CSM*)

9:10 a.m.

Target Preparation for the Fission TPC, W. Loveland, L. Yao (*Oregon State Univ*)

9:30 a.m.

Fission TPC Prototype Commissioning at a Fast Neutron Beam of the WNR Facility, R. Baker (*California Polytechnic State Univ*), E. Burgett (*Georgia Tech, Idaho State Univ*), D. Duke (*California Polytechnic State Univ*), U. Greife (*CSM*), S. Grimes (*Ohio Univ*), M. Heffner (*LLNL*), N. Hertel (*Georgia Tech*), T. Hill (*INL*), D. Isenhower (*ACU*), J. L. Klay (*California Polytechnic State Univ*), N. Kornilov (*Ohio Univ*), R. Kudo (*California Polytechnic State Univ*), A. B. Laptev (*LANL*), W. Loveland (*Oregon State Univ*), T. Massey (*Ohio Univ*), C. McGrath (*INL*), L. Montoya (*LANL*), D. Pamplin, H. Qu, S. Sharma (*ACU*), L. Snyder (*CSM*), T. Thornton (*ACU*), F. Tovesson (*LANL*), D. Towell, R. S. Towell, S. Watson (*ACU*)

9:50 a.m.

Event Reconstruction for the NIFFTE TPC, Richard Baker (*California Polytechnic State Univ*), Eric Burgett (*Georgia Tech, Idaho State Univ*), Dana Duke (*California Polytechnic State Univ*), Uwe Greife (*CSM*), Steven Grimes (*Ohio Univ*), Mike Heffner (*LLNL*), Nolan Hertel (*Georgia Tech*), Tony Hill (*INL*), Donald Isenhower (*ACU*), J. L. Klay (*California Polytechnic State Univ*), Nickolay Kornilov (*Ohio Univ*), Ryuho Kudo (*California Polytechnic State Univ*), Alexander B. Laptev (*LANL*), W. Loveland (*Oregon State Univ*), Thomas Massey (*Ohio Univ*), Chris McGrath (*INL*), Lucas Montoya (*LANL*), Daniel Pamplin, Hai Qu, Sarvagya Sharma (*ACU*), Lucas Snyder (*CSM*), Tyler Thornton (*ACU*), Fredrik Tovesson (*LANL*), Dwayne Towell, R. S. Towell, S. Watson (*ACU*)

10:10 a.m.

The Data Acquisition for the NIFFTE TPC, Richard Baker (*California Polytechnic State Univ*), Eric Burgett (*Georgia Tech, Idaho State Univ*), Dana Duke (*California Polytechnic State Univ*), Uwe Greife (*CSM*), Steven Grimes (*Ohio Univ*), Mike Heffner (*LLNL*), Nolan Hertel (*Georgia Tech*), Tony Hill (*INL*), Donald Isenhower (*ACU*), J. L. Klay (*California Polytechnic State Univ*), Nickolay Kornilov (*Ohio Univ*), Ryuho Kudo (*California Polytechnic State Univ*), Alexander B. Laptev (*LANL*), W. Loveland (*Oregon State Univ*), Thomas Massey (*Ohio Univ*), Chris McGrath (*INL*), Lucas Montoya (*LANL*), Daniel Pamplin, Hai Qu, Sarvagya Sharma (*ACU*), Lucas Snyder (*CSM*), Tyler Thornton (*ACU*), Fredrik Tovesson (*LANL*), Dwayne Towell, R. S. Towell, S. Watson (*ACU*)

10:30 a.m.

GEANT Simulations of the TPC, R. T. Thornton (*ACU*), *NIFFTE Collaboration*

10:50 a.m.

Hardware Updates for the Fission Time Projection Chamber Project, E. Burgett (*Idaho State Univ*)

DOE R&D Activities for Nuclear Power Instrumentation, Control, and Human-Machine Interface Technologies–Panel, sponsored by HFICD. *Session Organizer:* Suibel Schuppner (*DOE*).

Cochairs: Suibel Schuppner, Richard Wood (*ORNL*)

Room 214

8:30 a.m.

This session will provide an overview of research and development (R&D) activities for instrumentation, control, and human-machine interface technologies under several DOE Office of Nuclear Energy programs. The programs to be addressed include Light-Water Reactor Sustainability (LWRS), Next Generation Nuclear Plant (NGNP), Small Modular Reactors (SMR), Advanced Reactor Concepts (ARC), Fuel Cycle R&D (FCR&D), and Nuclear Energy Enabling Technologies (NEET). The panelists will discuss accomplishments for current projects in ongoing programs, the planning status and research objectives for new programmatic initiatives, and coordination among the research pathways.

PANELISTS:

- Hans Gougar (*INL*)
- Christopher Grandy (*ANL*)
- Bruce Hallbert (*INL*)
- David Holcomb (*ORNL*)
- Joy Rempe (*INL*)
- Richard Wood (*ORNL*)

TUESDAY, JUNE 28, 2011, 1:00 P.M.

Fire Phenomena in Safety Assessments, sponsored by NISD.

Session Organizer: Dana Powers (*SNL*). *Cochairs:* Gabriel J. Taylor (*NRC*), Steve Nowlen (*SNL*)

Diplomat Ballroom 1

1:00 p.m.

Advances in Understanding the Phenomena of Electrical Cable Fire-Induced Hot Shorting, Gabriel Taylor, Harold Barrett (*NRC*), Dan Funk (*Edan Engineering*), Steven Nowlen (*SNL*), invited

Technical Sessions by Day: Tuesday

1:25 p.m.

Understanding the Fire Hazards of Grouped Electrical Cables, Kevin McGrattan (*NIST*), David Stroup (*NRC*)

1:50 p.m.

Electrical Failure Behavior of Kerite FR Insulated Electrical Cables, Steven Nowlen, Jason Brown (*SNL*), Gabriel Taylor (*NRC*)

2:15 p.m.

High Energy Arcing Faults as Non-negligible Contributor to Nuclear Installation Safety—An International Perspective, Marina Roewekamp (*GRS mbH*)

2:40 p.m.

Impacts of Fire Smoke and Suppressant on Operators at NPPs, Xiang-Wei Kuang, I-Chuan Lee, Wen-Sheng Hsu, Yuh-Ming Ferng, Bau-Shi Pei (*Natl Tsing Hua Univ*)

3:05 p.m.

Understanding the Consequences of Liquid Sodium Metal Fires, Tara J. Olivier, John C. Hewson, Steven P. Nowlen (*SNL*)

Future of the Nuclear Fuel Cycle and Waste Management—Panel, sponsored by FCWMD. *Session Organizer:* Charles W. Forsberg (*MIT*). *Chair:* Charles W. Forsberg

Diplomat Ballroom 2

1:00 p.m.

Since the 1970s, there has been a "standard" vision of the future fuel cycle where LWR spent nuclear fuel is reprocessed and is used to start up sodium-cooled fast reactors. Changing conditions and new technologies have resulted in several major studies (Idaho National Laboratory, MIT, Johns Hopkins, and the European Community) on the future of the nuclear fuel cycle—resulting in some cases with similar and in other cases dissimilar recommendations. The panel—leaders in these studies—will present and discuss the basis for their conclusions.

PANELISTS:

- Charles Forsberg (*MIT*)
- Sekazi Konze Hingwo (*MIT*)
- Emory Collins (*ORNL*)
- David Hill (*INL*)
- Luc Ven den Dupel (*AREVA*)

Sensitivity and Uncertainty Methodologies in Nuclear Calculations—I, sponsored by MCD; cosponsored by RPD. *Session Organizer:* Hany S. Abdel (*NCSU*), Cristian Rabiti (*INL*). *Chair:* Hany S. Abdel-Khalik (*NCSU*)

Diplomat Ballroom 3

1:00 p.m.

Dimensionality Reduction for Uncertainty Quantification of Nuclear Engineering Models, Oleg Roderick (*ANL*), Zhu Wang (*Virginia Tech*), Mihai Anitescu (*ANL*)

1:25 p.m.

Discrete Event Simulation Modeling for RAMI Analysis for Normal and Upset Plant Operation, J. J. Nutaro, J. C. Schryver, M. J. Haire (*ORNL*)

1:50 p.m.

Reduced Order Modeling: Tensor-Free Expansion for Nonlinear Features Identification, Hany S. Abdel-Khalik, Jason M. Hite (*NCSU*)

2:15 p.m.

Gradient-Enhanced Universal Kriging for Uncertainty Propagation in Nuclear Engineering, Brian Lockwood (*Univ of Wyoming*), Mihai Anitescu (*ANL*), invited

2:40 p.m.

A Pseudo-Generalized Perturbation Theory Approach for Sensitivity Analysis, Youngsuk Bang, Hany Abdel-Khalik (*NCSU*)

3:05 p.m.

Propagation of Errors in Nuclide Production and Depletion Calculations, Hayes F. Stripling, Marvin L. Adams (*Texas A&M*)

3:30 p.m.

Lessons Learned from an Initial VU-Assessed Code Development Effort, R. R. Nourgaliev, T.-N. Dinh, R. A. Nelson (*INL*)

Modeling and Simulation of Nuclear Fuels and Materials, sponsored by MSTD. *Session Organizer:* Ken Geelhood (*PNNL*). *Chair:* Heng Ban (*Utah State Univ*)

Diplomat Ballroom 4

1:00 p.m.

Modeling High Temperature Radiation Damage to Optical Fibers, Christian M. Petrie, Thomas E. Blue, Jonathan A. Kulisek (*Ohio State*)

1:25 p.m.

Strain-Based Continuum Damage Model for Nuclear Fuels, Pallab Barai, Srikanth Allu, Kevin T. Clarno, William K. Cochran, Larry Ott, Sreekanth Pannala, Bobby Philip, Rahul Sampath, Srdjan Simunovic (*ORNL*), James Banfield (*Univ of Tennessee*), Gary A. Dilts, Bogdan Mihaila (*LANL*), Jung Ho Lee, Gokhan Yesilyurt (*ANL*)

1:50 p.m.

Simulation-Aided Qualification of Thermocouple Data for AGR Experiments, Binh T. Pham, Jeffrey J. Einerson (*INL*)

2:15 p.m.

Stress Analysis of TRISO Particle Using Modified FEAP, Jianwei Hu, Hashem M. Mourad (*LANL*), Rizwan-uddin (*Univ of Illinois*)

2:40 p.m.

Simulations of Thermal and Oxygen Transport in UO₂ Fuels, Marius Stan (*ANL*), Bogdan Mihaila (*LANL*)

3:05 p.m.

Accelerated Damage Module Thermal Analysis for LIFE System, A. Lafuente, J. F. Latkowski, K. J. Kramer (*LLNL*)

Technical Sessions by Day: Tuesday

Impact of DOE-NEUP to Research Reactors and Nuclear Science Programs, sponsored by IRD; cosponsored by BMD.

Session Organizer: Kenan Ünlü (*Penn State Univ.*)

Chair: Stephen LaMont (*LANL*)

Diplomat Ballroom 5

1:00 p.m.

Radiation Science and Engineering Center Upgrades at the Pennsylvania State University, Brenden J. Heidrich, Kenan Ünlü (*Penn State*)

1:25 p.m.

Development of a Neutron Radiography and Tomography Facility at the Colorado School of Mines, Aaron E. Craft, Jeffrey C. King (*CSM*)

1:50 p.m.

Improving Neutron Depth Profiling at The Ohio State University Using Multiple Detectors, Padhraic L. Mulligan, Danyal J. Turkoglu, Praneeth Kandlakunta, Lei Cao (*Ohio State*)

2:15 p.m.

Thermal Neutron Scattering Cross Sections of Sapphire at Cryogenic Temperatures, I. I. Al-Qasir, V. H. Gillette, A. I. Hawari (*NCSU*)

2:40 p.m.

Ab Initio Structure Evaluation for Solid H₂ and D₂ Neutron Moderators, J. L. Wormald, A. I. Hawari (*NCSU*)

3:05 p.m.

Toward an Improved Hydrogen Standard, Nikolay Kornilov, Thomas N. Massey, Steven M. Grimes, John E. O'Donnell, Donald Carter (*Ohio Univ.*), Allan D. Carlson (*NIST*), Robert C. Haight (*LANL*), Eric Burgett (*Georgia Tech*), Uwe Greife (*CSM*), Mike Heffner (*LLNL*), Nolan Hertel (*Georgia Tech*), Tony Hill (*INL*), Donald Isenhower (*ACU*), J. L. Klay, Ryuho Kudo (*California Polytechnic State Univ.*), Alexander Laptev (*LANL*), W. Loveland (*Oregon State Univ.*), Chris McGrath, Nathan Pickle, Hai Qu, Sarvagya Sharma (*ACU*), Lucas Snyder (*CSM*), Tyler Thornton (*ACU*), Fredrik Tovesson (*LANL*), R. S. Towell, S. Watson (*ACU*)

Advances in Nuclear Reactor Kinetics—I, sponsored by RPD.

Session Organizers: Piero Ravetto (*Politecnico di Torino*), David Chandler (*UT/ORNL*), Akio Yamamoto (*Univ of Nagoya*), Trent Primm III (*ORNL*).

Cochairs: Piero Ravetto, David Chandler (*UT/ORNL*)

Regency Ballroom 1

1:00 p.m.

Black Rabbit Ejection Studies and COMSOL Kinetics Modeling Development at HFIR, David Chandler, G. Ivan Maldonado (*Univ of Tennessee*), R. T. Primm III, R. W. Hobbs (*ORNL*)

1:25 p.m.

Kinetics Models for Safety Studies of Fluid-Fuel Reactors, Dalin Zhang, Andrei Rineiski (*KIT*), Suizheng Qiu (*Xi'an Jiaotong Univ*)

1:50 p.m.

Kinetic Aspects of Neutron Noise in Molten Salt Reactors, Imre Pázsit, Anders Jonsson (*Chalmers Univ of Technol*), invited

2:15 p.m.

Power and Fuel Temperature Based Adaptive Time Step Control for Prompt-Critical Reactivity Transients, Darren G. Talley (*SNL*)

2:40 p.m.

Prismatic Core Coupled Transient Benchmark, J. Ortensi, M. A. Pope, G. Strydom, R. S. Sen, M. D. DeHart, H. D. Gougar (*INL*), C. Ellis, A. Baxter (*General Atomics*), V. Seker, T. J. Downar (*Univ of Michigan*), K. Vierow (*Texas A&M*), K. Ivanov (*Penn State*)

3:05 p.m.

Reactivity Feedbacks of the UCB Breed-and-Burn Reactor, Staffan A. Qvist, Florent Heidet, Ehud Greenspan (*Univ of California, Berkeley*)

3:30 p.m.

On the Application of Neutron Kinetics Models for a Small LFR Core Transient Analysis, Sara Bortot (*ANL, Politecnico di Milano*), Gerardo Aliberti (*ANL*), Antonio Cammi (*Politecnico di Milano*)

Reactor Physics Design, Validation, and Operating Experience—I, sponsored by RPD. *Session Organizer:* Fausto Franceschini (*Westinghouse*).

Cochairs: Temitope Taiwo (*ANL*), Paolo Ferroni (*Westinghouse*)

Regency Ballroom 2

1:00 p.m.

Newly Available Reactor Physics Benchmark Data in the March 2011 Edition of the IRPhEP Handbook, John D. Bess, J. Blair Briggs (*INL*), Jim Gulliford (*OECD/NEA*)

1:25 p.m.

Securing Operating Data from Passive Safety Tests at the Fast Flux Test Facility, David W. Wootan, Ronald P. Omberg (*PNNL*), Bruce J. Makenas (*Mission Support Alliance*), Deborah L. Nielsen, Joseph V. Nelson (*Indian Eyes LLC*), David L. Polzin (*CH2M Hill*)

1:50 p.m.

LEU Monolithic Fuel Full-Length Element Experiment K-eff Perturbation in ATR, G. S. Chang, M. N. Neeley (*INL*)

2:15 p.m.

Justification for an Increase in Authorized Operating Power at HFIR, R. T. Primm III, Germina Ilas (*ORNL*)

2:40 p.m.

Actual ABWR Core Design Using Loading Pattern Optimization System FINELOAD-3 Minimum Shuffling Option, Akihiro Fukao, Shinji Yoshida, Takashi Yoshii (*TEPCO Systems Corp*)

3:05 p.m.

Performance Analysis of Discontinuous Penalty Function Based Multi-Objective Simulated Annealing for Multicycle Problems, Tong Kyu Park (*Seoul Natl Univ, FNC Technol Co Ltd*), Han Gyu Joo, Chang Hyo Kim (*Seoul Natl Univ*)

3:30 p.m.

Coupling of Boiling Water Reactor Core Loading Pattern Optimization System FINELOAD-3 with MICROBURN-B2, Takashi Yoshii, Akihiro Fukao, Yusuke Kuroda, Suetsugu Jagawa (*TEPCO Systems Corp*), Ralph Grummer, Florin Curca-Tivig (*AREVA*)

Data, Analysis, and Operations for Nuclear Criticality Safety—II, sponsored by NCSD. *Session Organizer:* Larry L. Wetzel (*Babcock & Wilcox-NOG*). *Chair:* Douglas G. Bowen (*LANL*)

Regency Ballroom 3

Technical Sessions by Day: Tuesday

1:00 p.m.

First Results from the Seven Percent Critical Experiment, G. A. Harms, J. T. Ford, A. D. Barber (*SNL*)

1:25 p.m.

Development of an ENDF Thermal Library for SiO₂ and Testing of Criticality Effects, J. C. Holmes, I. I. Al-Qasir, A. I. Hawari (*NCSU*), L. C. Leal (*ORNL*)

1:50 p.m.

Criticality Benchmark Comparisons for DAGMC, P. J. Snouffer, R. N. Slaybaugh, P. P. H. Wilson (*Univ of Wisconsin, Madison*)

2:15 p.m.

Statistical Coverage Concerns in a Revised “k-Effective of the World” Problem, Brian C. Kiedrowski, Forrest B. Brown (*LANL*)

2:40 p.m.

On the Kinetic Behavior of Uncontrolled Supercritical Systems, D. Minnema, J. Abrefah, C. Martin, E. Elliott, Z. Beauvais (*DNFSB*)

LWR Sustainability Program R&D Overview—Panel, sponsored by

OPD. *Session Organizers:* Ronaldo Szilard (*INL*), Edward (Ted) L. Quinn (*ANS Past President, Technology Resources*).
Chair: Ronaldo H. Szilard (*INL*)

Atlantic Ballroom 1

1:00 p.m.

A follow-on to a session held at the ANS 2010 Winter Meeting, this session will provide the latest update on the overview and status of the LWR Sustainability (LWRS) Program, which is directed by DOE and approved by Congress to support the long-term high reliability and excellent performance of the current fleet of 104 nuclear power plants in the U.S. Major R&D areas include collaborative research focus areas of Nuclear Materials Aging and Degradation, Advanced Instrumentation, Information and Control Systems Technologies, Advanced LWR Nuclear Fuel Design, Risk-Informed Safety Margin Characterization, and Economics and Efficiency Improvement. Panelists from national labs and industry will address the overall program and major focus areas including progress to date, ongoing activities, and major challenges to operation of our reactor fleet beyond 60 years at very high performance levels.

PANELISTS:

- Richard Reister (*DOE*)
- Jeremy Busby (*ORNL*)
- Robert Youngsblood (*INL*)
- Mitchell Meyer (*INL*)
- Bruce Hallbert (*INL*)
- Hongbin Zhang (*INL*)

Research by U.S. DOE NEUP-Sponsored Students—III,

sponsored by ETWDD. *Session Organizer:* Marsha Lambregts (*INL*).
Co-chairs: Marsha Lambregts, Jenna Payne, Greg Bala (*INL*)

Atlantic Ballroom 2

1:00 p.m.

An Integrated Diffusion-Transport Solution for a Simplified HTR Problem, Robert Hayward, Farzad Rahnema, Dingkang Zhang (*Georgia Tech*)

1:20 p.m.

Development of 4H-SiC Schottky Diode Detector for Nuclear Fuel Reprocessing Applications, Alexandra Zelaski, Timothy R. Garcia, Ashutosh Kumar, Thomas E. Blue, Wolfgang Windl (*Ohio State*)

1:40 p.m.

COMET-Hex Solution to a 2-D Stylized High Temperature Test Reactor Benchmark, Kevin John Connolly, Farzad Rahnema, Dingkang Zhang (*Georgia Tech*)

2:00 p.m.

Computational Alpha-Particle Spectroscopy Using TCAD for Pyroprocessing Monitoring, Timothy R. Garcia, Thomas E. Blue, Wolfgang Windl (*Ohio State*)

2:20 p.m.

Specification for a 1-Dimensional Gas-Cooled Reactor Benchmark Problem for Neutron Transport, Steven Douglass, Farzad Rahnema (*Georgia Tech*)

2:40 p.m.

Emulation of VHTR Operating Conditions in TRIGA Reactors, Jesse M. Johns, Matthew P. Johnson, Pavel V. Tsvetkov, Shannon M. Bragg-Sitton, Ayodeji B. Alajo (*Texas A&M*)

3:00 p.m.

3D High-Fidelity VHTR Modeling for Performance Optimization Simulations: Monitoring and Operation, Matthew P. Johnson, Tom G. Lewis III, Pavel Tsvetkov (*Texas A&M*)

3:20 p.m.

Quasi-Static Validation of the AMP Nuclear Fuel Performance Code, James Banfield (*Univ of Tennessee*), Srikanth Allu, Pallab Barai, Kevin T. Clarno, William K. Cochran (*ORNL*), Gary A. Dilts (*LANL*), Jung Ho Lee (*ANL*), G. Ivan Maldonado (*Univ of Tennessee*), Bogdan Mihaila (*LANL*), Larry Ott, Sreekanth Pannala, Bobby Philip, Rahul Sampath, Srdjan Simunovic (*ORNL*), Gokhan Yesilyurt (*ANL*)

3:40 p.m.

Open Loop Oscillator Technique, Ben Baker, George Imel (*Idaho State Univ*)

Computational Thermal Hydraulics—I, sponsored by THD.

Co-chairs: Si Young Lee (*SRNL*), Eung Soo Kim (*INL*)

Atlantic Ballroom 3

1:00 p.m.

On the Modeling of Natural Turbulent Mixing in Wire-Wrapped Rod Bundles, Rui Hu, Thomas H. Fanning (*ANL*)

1:25 p.m.

Integrated Static and Flow-Through Capsule Assembly for Irradiation Testing, Donna Post Guillen, Brian P. Durtschi (*INL*), Adam Zabriskie, Heng Ban (*Utah State Univ*)

1:50 p.m.

SWAAM-MF: More Than a Sodium-Water Reaction Code, Craig Gerardi, Carl Youngdahl, Chris Grandy (*ANL*)

2:15 p.m.

Sub-Channel Analysis for Fuel Assembly Concept: FAIDUS for Sodium-Cooled Fast Reactor, Yasushi Okano, Hiroyuki Ohshima, Tsutomu Okubo (*JAEA*)

Technical Sessions by Day: Tuesday/Wednesday

2:40 p.m.

Role of Artificial Turbine in RELAP/SCDAP MOD 4.0,
Ashutosh Tiwari, Prabhat Munshi, Ashok Khanna (*IIT-India*)

3:05 p.m.

Uncertainty Analysis of Large Break LOCA for a Pressurized Heavy Water Reactor, A. K. Trivedi, A. Srivastava, H. G. Lele, P. Munshi, M. S. Kalra (*IIT-India*)

3:30 p.m.

Numerical Simulations of Helical Coiled Heat Exchanger in HTGR, Wei-Chen Lin, Yuh-Ming Ferng, Ching-Chang Chieng (*Natl Tsing Hua Univ*)

Digital Upgrade Experience Implementing NRC ISG-06—Panel,

sponsored by HFICD. *Session Organizer:* Edward (Ted) L. Quinn (*ANS Past President, Technology Resources*). *Cochairs:* Edward (Ted) L. Quinn, Steven Arndt (*NRC*)

Room 214

1:00 p.m.

This session will be an update session on the current experience with implementing NRC Interim Staff Guidance ISG-06 R1, Licensing Process, issued in January 2011 to address the overall licensing process guidelines and expected submittals for NRC approval of a digital upgrade at a U.S. nuclear plant. Speakers from NRC, EPRI, utility, and vendors involved in implementing this new guidance will address this issue and present experience to date as well as lessons learned and expected activities in the near term.

PANELISTS:

- Steve Arndt (*NRC*)
- Ted Quinn (*Technology Resources*)
- Steve Seaman (*Westinghouse*)
- Mike Bailey (*Duke*)
- Clayton Scott (*Invensys*)
- Gregg Clarkson (*Wolf Creek*)

TUESDAY, JUNE 28, 2011, 4:00 P.M.

Special Session: The Accident at Fukushima Daiichi—Preliminary Investigations—Panel, Cosponsored by ESD, NISD, OPD, RPSD, THD.

Grand Ballroom

4:00 p.m.

This panel session will focus on the latest technical information available on the accident at Fukushima Daiichi. Topics expected to be addressed include the accident sequence, challenges faced by the operating staff, reactor and fuel damage mechanisms, environmental impacts, and emergency response.

MODERATOR:

Andrew Kadak (*ANS Past President*)

PANELISTS:

- Michael Weber (*U.S. Nuclear Regulatory Commission*)
- Hisashi Ninokata (*Tokyo Institute of Technology*)
- Robert Budnitz (*Lawrence Berkeley National Laboratory*)
- Steven Root (*Southern California Edison, San Onofre Generating Station*)
- Additional speaker – to be determined

WEDNESDAY • JUNE 29, 2011

7:30 AM – 5:00 PM

MEETING REGISTRATION

8:00 AM – 10:00 AM

SPOUSE/GUEST HOSPITALITY

8:30 AM – 11:30 AM

2011 ANS ANNUAL MEETING: TECHNICAL SESSIONS

- Generic Aging Lessons Learned in the NPP License Renewal Process: The Path Forward—Paper/Panel
- Used Fuel Component Recycle Advanced Waste Forms and Storage—I
- Mathematical Modeling and Computational Methods
- Thermal Physical Properties and Measurement Techniques for Nuclear Materials
- Proton and Ion Treatment of Cancer
- Design and Analysis for Plutonium and Minor Actinides Transmutation—II
- Reactor Physics: General—II
- Proper Applications of Benchmarking in Criticality Safety
- Operations and Power: General—I
- Kent Hamlin Memorial Session on Training, Human Performance, and Work Force Development
- Thermal Hydraulics of Gas-Cooled Reactors—II
- Radiation Protection and Shielding: General
- SRS Plutonium Disposition Projects Update—Panel

1:00 PM – 4:00 PM

2011 ANS ANNUAL MEETING: TECHNICAL SESSIONS

- Nuclear Installations Safety: General
- Used Fuel Component Recycle Advanced Waste Forms and Storage—II
- Computational Methods: General
- Novel Instrumentation and Measurement Techniques
- Thermal Hydraulics of Small Modular Reactors
- Experimental and Computational Two-Phase Flow
- Design and Analysis for Plutonium and Minor Actinides Transmutation—III
- Reactor Analysis Methods—II
- Advances in Small and Medium Sized Reactor Designs
- Operations and Power: General—II
- Nuclear Communications: Getting It Right—Panel
- Key Nuclear Communication Messages—Panel
- General Thermal Hydraulics—II
- Computational Resources
- Standards Symposium—Panel

4:00 PM – 4:30 PM

ANS BUSINESS MEETING

4:30 PM – 6:30 PM

PUBLIC INFORMATION WORKSHOP

7:00 PM – 10:00 PM

EVENING EVENT:

“Reception and Dinner at the Diplomat Country Club”

WEDNESDAY, JUNE 29, 2011, 8:30 A.M.

Generic Aging Lessons Learned in the NPP License Renewal Process: The Path Forward—Paper/Panel, sponsored by NISD.

Session Organizer: Amy Hull (*NRC*). *Cochairs:* Amy Hull, Gene Carpenter (*NRC*)

Diplomat Ballroom 1

8:30 a.m.

NRC License Renewal Guidance Documents—2010 Update, Robert A. Gramm (*NRC*), invited

8:55 a.m.

PANEL DISCUSSION

Based on the Atomic Energy Act, the NRC issues licenses for commercial power reactors to operate for up to 40 years and allows these licenses to be renewed for up to another 20 years. To date, the NRC has approved license renewal for well over 50% of the 104 reactors in the U.S. originally licensed to operate for 40 years.

Technical Sessions by Day: Wednesday

There are now about 10 reactors in the first period of extended operation, and there is increasing interest in subsequent license renewal and NPP long-term operation (LTO) beyond 60 years.

One foundation of the license renewal process has been license renewal guidance documents such as the Generic Aging Lessons Learned (GALL) Report (NUREG-1801), the License Renewal Standard Review Plan (NUREG-1800), which completed its second revision in January 2011. The GALL Report evaluates several thousand NPP components, identifies the significant aging effects, and provides an acceptable aging management program for the component. This session will explore advances based on the substantial work that has been conducted over the past decade in license renewal. Additionally, panelists will reflect on pertinent recent highlights including the Second Workshop on U.S. Nuclear Power Plant Life Extension Research and Development. The panel will review the accomplishments to date, discuss ongoing LTO activities, and consider the remaining gaps that need additional attention.

PANELISTS:

- Gene Carpenter (*NRC*)
- Allen Hiser (*NRC*)
- Amy Hull (*NRC*)
- Michael Fallin (*CENG*)
- Rich Reister (*DOE*)
- Jeremy Busby (*ORNL*)

Used Fuel Component Recycle Advanced Waste Forms and Storage—I,

sponsored by FCWMD. *Session Organizer:* Emory D. Collins (*ORNL*).

Chair: Emory D. Collins

Diplomat Ballroom 2

8:30 a.m.

Preliminary Analysis of Thermal and Mechanical Performance of RU Fuel in Candu, Jong Yeob Jung, Joo Hwan Park (*KAERI*)

8:55 a.m.

Recycle of Zirconium from Used Nuclear Fuel Cladding: A Progress Report, G. D. Del Cul, E. D. Collins (*ORNL*), D. S. Terekhov, N. V. Emmanuel (*CVMR Corp*)

9:20 a.m.

Calcine Disposal Development Using Hot Isostatic Pressing, Ken Bateman (*INL*)

9:45 a.m.

Glass-Ceramic Waste Form Development for Fission Products Waste Streams, Jarrod Crum, Laura Turo (*PNNL*), Anna Kossoy, Ming Tang (*LANL*)

10:10 a.m.

Immobilizing Fuel Reprocessing Wastes in an Alloy Waste Form, W. L. Ebert (*ANL*), invited

10:35 a.m.

Determination of Characteristics of Cermet High-Level Waste Forms, R. T. Jubin, W. S. Aaron, C. Ausmus, E. D. Collins, V. F. De Almeida, G. D. DelCul, J. A. Johnson, R. J. Vedder, S. L. Voit (*ORNL*)

Mathematical Modeling and Computational Methods,

sponsored by MCD. *Session Organizer:* Patrick Brantley (*LLNL*).

Chair: Sandra Dulla (*Politecnico di Torino*)

Diplomat Ballroom 3

8:30 a.m.

Implementation of an Analytical Multigroup Diffusion Solution in 1-D Heterogeneous Media, Barry D. Ganapol, Blake Tye (*Univ of Arizona*), E. Battistini, D. Mostacci (*Univ of Bologna*)

8:55 a.m.

Comparing Two Opacity Models in Monte Carlo Radiative Heat Transfer: Computational Efficiency and Parallel Load Balancing, M. Cleveland, T. S. Palmer (*Oregon State Univ*)

9:20 a.m.

Convergence Diagnostics Using Auto-Correlated Linear Regression Model on Cycle-Based Mesh Tally, Bo Shi, Bojan Petrovic (*Georgia Tech*)

9:45 a.m.

Sliding Mode Observer Based Fault Detection in Nuclear Systems, Günyaz Ablay, Tunc Aldemir (*Ohio State*)

10:10 a.m.

Clustering Scenarios on Manifolds, Diego Mandelli, Alper Yilmaz, Tunc Aldemir (*Ohio State*)

10:35 a.m.

Deterministic Neutron Time Correlation Simulation, Philippe P. Humbert (*CEA*)

11:00 a.m.

Monte Carlo Failure Analysis of Nuclear Graphite Under Different Strain Gradients, Haiyan Li, Alex Fok (*Univ of Minnesota*)

Thermal Physical Properties and Measurement Techniques for Nuclear Materials,

sponsored by MSTD.

Session Organizer: Ken Geelhood (*PNNL*).

Chair: Jack Henderson (*NETZCH*)

Diplomat Ballroom 4

8:30 a.m.

Evolution of the Thermophysical Properties of Gadolinia During Sintering, J. B. Henderson (*Netzsch Instruments*), A. T. Nelson, K. J. McClellan (*LANL*)

8:55 a.m.

Fission Gas Release and Microstructural Features During Thermal Annealing of Irradiated Fuels, T. Wiss, J.-P. Hiernaut, J.-Y. Colle, H. Thiele, V. V. Rondinella, R. J. M. Konings (*EC/JRC/ITE*), A. Sasahara, T. Sonoda, S. Kitajima (*CRIEPI*)

9:20 a.m.

Advanced Microanalytical and Thermophysical Investigations of Irradiated Nuclear Fuel, V. V. Rondinella, D. Staicu, C. T. Walker, S. Bremier, D. Papaioannou, T. Wiss, R. J. M. Konings (*EC/JRC/ITE*)

Technical Sessions by Day: Wednesday

9:45 a.m.

Photothermal Radiometry Measurement of an Ion-Irradiated Sample for Use in Postirradiation Examination, Kyle Horne, Heng Ban (*Utah State Univ*), Anna Matvienko, Andreas Mandelis (*Univ of Toronto*)

10:10 a.m.

Finite Element Analysis for the TRISO Fuel Compact Thermal Conductivity Measurement System, Colby Jensen, Changhu Xing, Heng Ban (*Utah State Univ*), Jeffrey Phillips (*INL*)

10:35 a.m.

Experimental Error Evaluation of a Thermal Conductivity Measurement System for TRISO Fuel Compact, Changhu Xing, Colby Jensen, Heng Ban (*Utah State Univ*), Jeffrey Phillips (*INL*)

Proton and Ion Treatment of Cancer, sponsored by BMD; cosponsored by CMPWG. *Session Organizer:* Rolf Zeisler (*NIST*). *Chair:* Wayne Newhauser (*Univ of Texas*)

Diplomat Ballroom 5

8:30 a.m.

Radiation Protection Calculations for Patients and Staff, Wayne D. Newhauser (*Univ of Texas M D Anderson Cancer Ctr*), invited

8:55 a.m.

Computational Phantoms Used for Monte Carlo Organ Dose Assessment, X. George Xu (*RPI*), invited

9:20 a.m.

Improved Dosimetric Quantities and Methods for Population-Based Studies of Late Effects, Annelise Giebler, Rebecca M. Howell, Rui Zhang, Carol J. Etzel, Anita Mahajan, Wayne D. Newhauser (*Univ of Texas M D Anderson Cancer Ctr*), invited

9:45 a.m.

Prediction of Neutron Dose Equivalent Source Terms for Radioprotection in Particle Therapy, A. Perez-Andujar, Rui Zhang, Wayne D. Newhauser (*Univ of Texas*), invited

10:10 a.m.

Whole Body Dose Reconstructions and Risk Calculations in Proton Therapy, Rui Zhang, Dragan Mirkovic, Wayne D. Newhauser (*Univ of Texas M D Anderson Cancer Ctr*), invited

10:35 a.m.

Energy Spectrum Reconstruction for Medical Linac by Analytical Double-Source Model, Gui Li (*CAS*), Sun Guangyao (*Univ Sci Technol China*), Huaqing Zheng (*CAS/Univ Sci Technol China/ETRCAR*), Jia Li (*Univ Sci Technol China/ETRCAR*), Yican Wu (*CAS/Univ Sci Technol China/ETRCAR*), FDS Team

11:00 a.m.

Auto-Modeling of Three-Dimensional Radiation Beam in Accurate/Advanced Radiotherapy System (ARTS), Jia Li, Yican Wu (*Univ Sci Technol China/CAS*), Gui Li (*Univ Sci Technol China*), FDS Team

Design and Analysis for Plutonium and Minor Actinides

Transmutation—II, sponsored by RPD; cosponsored by FCWMD. *Session Organizers:* Mark D. DeHart (*INL*), Ivan G. Maldonado (*UT*), Fausto Franceschini (*Westinghouse*). *Chair:* Moussa Mahgerefteh (*Exelon*)

Regency Ballroom 1

8:30 a.m.

IAEA Coordinated Research Project: Analyses of Transmutation Performance, Alberto Abánades (*UPM*), Francisco Alvarez (*CIEMAT*), Kenji Nishihara (*JAEA*), Alexander Stanculescu (*IAEA*), invited

8:55 a.m.

Fast Neutron-Induced Actinide Fission Measurements Relevant to Transmutation Studies, Fredrik Tovesson, Alexander B. Laptev (*LANL*), Tony S. Hill (*INL*)

9:20 a.m.

Parametric Sensitivity/Uncertainty Effects in Performance Domain Evaluations and Design of Advanced Transmutation Systems, Marie Cuvelier, David E. Ames, Pavel V. Tsvetkov (*Texas A&M*)

9:45 a.m.

Performance-Constrained Reload Pattern Searches for Deep Burn HTR Hexagonal Block Systems, Pavel V. Tsvetkov, Tom G. Lewis III, Sathish K. Lakshminpathy (*Texas A&M*), Abderrafi M. Ougouag (*INL*), Francesco Venneri (*Logos Technol*)

10:10 a.m.

Analysis of Transmutation Systems Using JENDL-4.0, Hiroki Iwamoto, Kenji Nishihara, Takanori Sugawara, Kazufumi Tsujimoto (*JAEA*)

Reactor Physics: General—II

, sponsored by RPD.

Session Organizer: Fausto Franceschini (*Westinghouse*). *Co-chairs:* Michael Fensin (*LANL*), Benoit Forget (*MIT*)

Regency Ballroom 2

8:30 a.m.

Control and Simulation of the Advanced Nuclear Reactors, Gunyaz Ablay, Tunc Aldemir (*Ohio State*)

8:55 a.m.

Implementation of a Coarse Mesh Finite Differencing in Cylindrical Geometry in PARCS, Andrew Hummel, Todd S. Palmer (*Oregon State Univ*)

9:20 a.m.

Application of Empirical Diffusion Coefficients to Two-Dimensional Natural-Uranium CANDU Lattices, Eleodor Nichita, Amin Patel (*Univ of Ontario Inst of Tech*)

9:45 a.m.

Validation Tests of Whole-Core Transport Code DeCART Against HTTR and VHTRC Experiments, Changho Lee, Won Sik Yang (*ANL*)

Technical Sessions by Day: Wednesday

10:10 a.m.

A Method for Computing Fixed-Source Driven Subcritical Multiplication Using Batch Mode in MCNPX, M. L. Fensin (*LANL*), E. J. Relson (*LANL/Univ of Michigan*), M. R. James, G. W. McKinney (*LANL*)

10:35 a.m.

Independent Benchmarking of a Hybrid Monte Carlo Simulation Particle Transport Code, Nathan P. DeLauder, Lawrence W. Townsend (*Univ of Tennessee*)

11:00 a.m.

A Hybrid Method of Improving Source Convergence Implemented in RMC, Ding She, Zeguang Li, Qi Xu, Kan Wang, Ganglin Yu (*Tsinghua Univ*)

Proper Applications of Benchmarking in Criticality Safety,

sponsored by NCS. *Session Organizer:* Jerry Hicks (*DOE Albuquerque*).
Chair: Jerry Hicks (*DOE*)

Regency Ballroom 3

8:30 a.m.

Development of an ICSBEP Benchmark Evaluation, Nearly 20 Years of Experience, J. Blair Briggs, John D. Bess (*INL*)

8:55 a.m.

Critical and Subcritical Experiment Design Team of the U.S. DOE Nuclear Criticality Safety Program, A. Nichole Ellis, James R. Felty, Lori Scott (*SAIC*)

9:20 a.m.

Getting Started with Benchmarks—Lessons Learned, Joseph A. Christensen (*DOE*)

9:45 a.m.

An Expanded Criticality Validation Suite for MCNP, R. D. Mosteller, F. B. Brown, B. C. Kiedrowski (*LANL*)

10:10 a.m.

Validation of Chlorine with Limited Experimental Data, Larry L. Wetzel (*Babcock & Wilcox, NOG-L*), William Newmyer (*Nuclear Safety Associates*)

Operations and Power: General—I, sponsored by OPD.

Chair: Belle R. Upadhyaya (*Univ of Tennessee*)

Atlantic Ballroom 1

8:30 a.m.

Surry Power Station Unit 1 Feedring Replacement Project, S. G. Vines, D. Godwin, P. Phelps (*Dominion Generation*)

8:55 a.m.

External Laundry Service—An Element of Nuclear Fleet Management, Michael Micklinghoff (*E.ON Kernkraft*), Manfred Wilke (*Unitech/ENS Nuklear Services*)

9:20 a.m.

Engineering of Combined Valve Mass Flow Rate for Steam Turbine System, B. Halimi (*Seoul Natl Univ*), Seung H. Kim (*PHILOSOPHIA*), Kune Y. Suh (*Seoul Natl Univ*)

9:45 a.m.

Surry Power Station Unit 1 Baffle Bolt Inspection Project, D. H. Phelps (*Dominion Generation*)

10:10 a.m.

Design of Robust MPC for Steam Generator Level in NPP, Ahmad Osgouee, Jin Jiang (*Univ of Western Ontario*)

10:35 a.m.

Adjustment to Liquid Radwaste Source Terms for Anticipated Operational Occurrences, D. W. Wu, S. Jha, P. J. Babel, A. T. Vieira (*Bechtel*)

11:00 a.m.

Development of a Thermal Differential Based Liquid Level Probe for Level Monitoring and Leak Detection Applications in Radioactive and Hazardous Environments, Reg W. McCulloch (*Delta M Corp*), Lance T. Brown (*Consultant*), Mark W. Abbott (*FlowServe Corp*), Edward L. Quinn (*ANS Past President, Technology Resources*)

Kent Hamlin Memorial Session on Training, Human Performance, and Work Force Development, sponsored by ETWDD.

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

Chair: Richard Holman (*INL*)

Atlantic Ballroom 2

8:30 a.m.

Development of a Communication Quality and Error Analysis Method for Nuclear Power Plant Operation, In-Seok Jang (*KAIST/Khalifa Univ*), Seung-Min Lee (*KAIST*), Poong-Hyun Seong (*KAIST/Khalifa Univ*)

8:55 a.m.

Leveraging Plant Operations to Maximize Internal Communications, Safety, Strategy, and Change, Martin Marquardt, Kevin R. Smith (*Tosan Inc*)

9:20 a.m.

Enhancing Nuclear Safety While Facilitating Workforce Transition, Martin Marquardt (*Tosan Inc*)

9:45 a.m.

Nuclear Education and Research Vertical Enhancement Model for Workforce Development, Stephen U. Egarievwe, Matthew E. Edwards, V. Trent Montgomery (*Alabama A&M*)

10:10 a.m.

Enhanced Body-Motion Control for Training and Education Using Virtual 3-D Models of NPPs, Imran Jabeer Haddish, Rizwan-uddin (*Univ of Illinois*)

10:35 a.m.

The Need for Next Generation of Radiochemists in the USA, Patricia Paviet-Hartmann (*INL*), Mansour Akbarzadeh (*URS Safety Management Solutions LLC*), Steven Bakhtiar (*INL*)

Technical Sessions by Day: Wednesday

11:00 a.m.

Rapid Peer Education of a Computational Nuclear Engineering Skill Suite, Kathryn D. Huff, Anthony M. Scopatz, Nicholas D. Preston, Paul P. H. Wilson (*Univ of Wisconsin, Madison*)

Thermal Hydraulics of Gas-Cooled Reactors—II, sponsored by THD. *Cochairs:* Piyush Sabharwall (*INL*), Jin Yan (*Westinghouse*)

Atlantic Ballroom 3

8:30 a.m.

Thermal-Hydraulic Performance Tests of PCHE Using Mixture-Gas for HTGRs, In Hun Kim, Hee Cheon No (*KAIST*)

8:55 a.m.

Heat Transfer Coefficient in a Pebble Bed Reactor, Rahman S. Abdulmohsin, Neven Y. Ali, Muthanna H. Al-Dahhan (*Missouri Univ Sci Technol*)

9:20 a.m.

Axial Gas Dispersion in a Pebble Bed Reactor: Effect of Pebble Size, Rahman S. Abdulmohsin, Muthanna H. Al-Dahhan (*Missouri Univ Sci Technol*)

9:45 a.m.

Assessing the Scale-up Methodology Based on Dimensional Analysis for Spouted Beds, Shreekanta Aradhya, Muthanna Al-Dahhan (*Missouri Univ Sci Technol*)

10:10 a.m.

Carbon Ceramic Experimental Test Apparatus Work to Verify the HTTF Design, Seth R. Cadell, Brian G. Woods (*Oregon State Univ*)

10:35 a.m.

Evaluation Metrics for Intermediate Heat Exchangers for Next Generation Nuclear Reactors, Piyush Sabharwall, Eung Soo Kim, Nolan Anderson (*INL*)

11:00 a.m.

Development of Figure of Merits (FOMs) for Intermediate Coolant Characterization and Selection, Eung Soo Kim, Piyush Sabharwall, Nolan Anderson (*INL*)

Radiation Protection and Shielding: General, sponsored by RPSD.

Session Organizer: Charlotta Sanders (*Westinghouse Electric*).

Chair: Richard Amato (*Consultant*)

Room 212/213

8:30 a.m.

Photon Attenuation in Non-Leaded Glovebox Gloves, S. Landsberger, J. Hashem, B. Phathanapirom, J. Williams (*Univ of Texas, Austin*), M. Cournoyer (*LANL*)

8:55 a.m.

Characterization of Neutron Detectors for DHS Applications, Martin R. Williamson (*Y-12 NSC*), Matthew Urffer, L. F. Miller (*Univ of Tennessee*)

9:20 a.m.

Human Lung Cancer Risks from Radon: Evidence of Influence from Bystander and Adaptive Response Effects on Radon Case-Control Studies—A Microdose Analysis, Bobby E. Leonard (*Int Acad Hi-Tech Soc*), Richard E. Thompson (*Johns Hopkins Bloomberg School of Public Health*)

9:45 a.m.

Recent Updates to Radiation Organ Dose Estimation Tool PIMAL, Hatice Akkurt, Dorothea Wiarda, Keith Eckerman (*ORNL*)

10:10 a.m.

Neutronic Analyses for the IVVS/GDC System in ITER, A. Serikov, U. Fischer, D. Leichtle (*KIT*)

SRS Plutonium Disposition Projects Update—Panel, sponsored by FCWMD. *Session Organizer:* Carl Mazzola (*Shaw Group*)

Room 214

8:30 a.m.

The construction of the Mixed Oxide Fuel Fabrication Facility (MFFF) and the Waste Solidification Building (WSB) at the Savannah River Site (SRS) is rapidly approaching the halfway point with schedule and budget goals being met. Recent programmatic changes associated with Pit Disassembly Conversion Facility (PDCF) location and the new irradiation services vendor are presently being addressed in NEPA space. The programmatic complexity of these comprehensive projects poses large integration challenges, requiring complex decisions to ensure that cost-effective solutions are reached. This session provides an update to these important nonproliferation projects and discusses how emerging issues have been addressed and effectively resolved.

PANELISTS:

- Eric Chassard (*Shaw AREVA MOX Services*)
- Richard Clark (*Shaw AREVA MOX Services*)
- Clay Ramsey (*NNSA-Savannah River*)
- Scott Cannon (*NNSA-Savannah River*)
- Tom Cantey (*NNSA-Savannah River*)

WEDNESDAY, JUNE 29, 2011, 1:00 P.M.

Nuclear Installations Safety: General, sponsored by NISD.

Session Organizer: Herbert Massie (*DNFSB*). *Chair:* Amy Hull (*NRC*)

Diplomat Ballroom 1

1:00 p.m.

Characteristic Evaluation of Ultrasonic Sodium Thermometer in System Startup Test of Monju, Kyoichi Okusa, Makoto Muranaka, Masutake Sotsu, Kouichi Kimura (*JAEA*)

1:25 p.m.

Historical Perspectives and Insights on ACRS Review of PWR Sump Performance, Hossein P. Nourbakhsh (*NRC*), Sanjoy Banerjee (*CUNY Energy Inst*)

Technical Sessions by Day: Wednesday

1:50 p.m.

Aqueous Homogeneous Reactor Stability, David K. Hayes, Robert H. Kimpland, Travis J. Grove (*LANL*)

Used Fuel Component Recycle Advanced Waste Forms and Storage—II,

sponsored by FCWMD. *Session Organizer:* G. D. Del Cul (*ORNL*).
Chair: G. D. Del Cul

Diplomat Ballroom 2

1:00 p.m.

Iodine Capture in Silver-Loaded Zeolites and Metal Organic Frameworks and Storage in Novel Low Temperature GCM Waste Forms, James L. Krumhansl, Tina M. Nenoff, Dorina Sava, Terry Garino, David Rademacher (*SNL*), Karena W. Chapman, Peter J. Chupas (*ANL*)

1:25 p.m.

Vitrification of IFR Electrorefiner Salt Wastes, Darryl D. Siemer (*INL, retired*), Mary Lou Duznik-Gougar (*Idaho State Univ*)

1:50 p.m.

Development of Radionuclide Inventory Evaluation Program for Disposal Facility, Jong Kuk Lee, Sang Chul Lee, Yoon Hee Lee, Sung Yeop Kim, Kun Jai Lee (*KAIST*), Min Chul Song, Seung-Young Joung (*KINS*)

2:15 p.m.

Fort St. Vrain Independent Spent Fuel Storage Installation License Renewal, Gregory G. Hall (*CH2M-WG Idaho*)

Computational Methods: General, sponsored by MCD.

Session Organizer: Patrick Brantley (*LLNL*). *Chair:* Barry Ganapol (*Univ of Arizona*)

Diplomat Ballroom 3

1:00 p.m.

Solution of Navier-Stokes Equations Using Modified Nodal Integral Method on a Graphics Card, Kai Huang, Rizwan-uddin (*Univ of Illinois*)

1:25 p.m.

Modeling of Interactions Between Liquid Coolant and Pebble Flow in Advanced High Temperature Reactors, Yanheng Li, Wei Ji (*RPI*)

1:50 p.m.

Mesh Generation Methods for Deterministic Radiation Transport Codes, Damien Moule, Paul Wilson (*Univ of Wisconsin, Madison*)

2:15 p.m.

Enhanced Geometry Capabilities for DAGMC, Brandon M. Smith, Paul P. H. Wilson (*Univ of Wisconsin, Madison*), Timothy J. Tautges (*ANL*)

2:40 p.m.

High Fidelity Transport in Complex Geometry Using Logical Combinatorics in TopAct, Steven J. Manson (*Raytheon*)

Novel Instrumentation and Measurement Techniques,

sponsored by MSTD. *Session Organizer:* Ken Geelhood (*PNNL*).
Chair: Vincenzo Rondinella (*ITE*)

Diplomat Ballroom 4

1:00 p.m.

Measurement of Magnetic Properties of Ferromagnetic Tubes for Heat Exchangers, Evgueni Todorov, Steve Levesque, Nathan Ames (*EWT*), Kenji Krzywosz (*EPRI*)

1:25 p.m.

Thermal Durability Measurements of Graphite Using Millimeter-Waves, Paul P. Woskov (*MIT*), S. K. Sundaram (*Alfred Univ*)

1:50 p.m.

Design and Characterization of a Neutron Detector for the Confinement Vessel Disposition Project, Sy Stange, Louise Evans, Katherine C. Frame, Douglas R. Mayo, William J. Crooks (*LANL*)

2:15 p.m.

Development of a Neutron Depth Profiling Facility for Characterizing Advanced Reactor Materials, Danyal J. Turkoglu, Praneeth Kandlakunta, Padhraic L. Mulligan, Lei Cao (*Ohio State*), Jinsuo Zhang (*LANL*), Byun Thak Sang (*ORNL*), R. Greg Downing (*NIST*)

2:40 p.m.

Characterization of High Quality Layered AlSb for Gamma Ray Radiation Detection, Erin Husher, Adam Hecht, Ganesh Balakrishnan (*Univ of New Mexico*)

3:05 p.m.

An Optical Fiber-Based Photothermal Reflectance Measurement System for Thermal Properties, Benjamin H. Timmins, Heng Ban (*Utah State Univ*)

3:30 p.m.

Initial Testing of a High-Temperature Low-Activation Furnace, David Hawn, Bryan Blake, Chris Petrie, Thomas E. Blue (*Ohio State*)

Thermal Hydraulics of Small Modular Reactors, sponsored by THD.

Cochairs: Jose Reyes, Jr. (*Oregon State Univ*), Hisashi Ninokata (*Tokyo Inst of Technol*)

Diplomat Ballroom 5

1:00 p.m.

RELAP5-3D Modeling of MASLWR Facility During ADS Blowdown Transient, C. Jordan Bowser, Brian G. Woods (*Oregon State Univ*)

1:20 p.m.

A Modular Design of a Direct Reactor Auxiliary Cooling System for AHTRs, X. Wang, Q. Lv, X. Sun, R. N. Christensen, T. E. Blue (*Ohio State*), G. Yoder, D. Wilson (*ORNL*), P. Sabharwall (*INL*)

1:40 p.m.

Thermal-Hydraulic Analysis of the REX-10 Test Facility Using RETRAN-03/INT, Soo-Been Yum, Yeon-Gun Lee, Jong-Won Kim, Goon-Cherl Park (*Seoul Natl Univ*)

Technical Sessions by Day: Wednesday

2:00 p.m.

Thermal-Hydraulic Analysis of REX-10 Under SBLOCA Condition, Sung Won Lim (*KAERI*), Yeon Gun Lee (*Seoul Natl Univ*), Young Jong Chung (*KAERI*)

Experimental and Computational Two-Phase Flow,

sponsored by THD. *Cochairs:* Hisashi Ninokata (*Tokyo Inst of Technol*), Jose Reyes, Jr. (*Oregon State Univ*)

2:25 p.m.

Experimental Investigation of Air-Water Two-Phase Flow in Combinatorial Channels, Mohan Yadav, Seungjin Kim (*Penn State*)

2:45 p.m.

Predictions of Bubbly Flow in Combinatorial Channels with TRACE Using the Interfacial Area Transport Equation, Seungjin Kim, Justin D. Talley, Ted Worosz, John Mahaffy (*Penn State*), Stephen M. Bajorek, Kirk Tien (*NRC*)

3:05 p.m.

On the Modeling of Gas/Liquid Flows Using DNS, Igor A. Bolotnov (*NCSU*), Michael Z. Podowski (*RPI*)

3:25 p.m.

Velocity Measurements in Gas-Liquid Two-Phase Slug and Churn-Turbulent Flows, Xinquan Zhou, Xiaodong Sun (*Ohio State*)

3:45 p.m.

Void Fraction Measurement Using Entropy Maximization Approach, Mayank Goswami, Anupam Saxena, Prabhat Munshi (*IIT-India*)

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

Design and Analysis for Plutonium and Minor Actinides

Transmutation—III, sponsored by RPD; cosponsored by FCWMD. *Session Organizer:* Mark D. DeHart (*INL*), Ivan G. Maldonado (*UT*), Fausto Franceschini (*Westinghouse*). *Cochairs:* Eugene Shwageraus (*MIT*), Ivan Maldonado (*Univ of Tennessee*)

Regency Ballroom 1

1:00 p.m.

Analysis of Sustainable Long-Term Fuel Cycle Scenarios, Francisco Álvarez-Velarde, Francisco Martín-Fuertes, Sara Pérez-Martín, Iván Merino, Enrique M. González-Romero (*CIEMAT*)

1:25 p.m.

Actinides Transmutation in a Hybrid LIFE, Massimiliano Fratoni, Kevin J. Kramer, Jeffery F. Latkowski (*LLNL*), Jeffrey J. Powers, Jeffrey E. Seifried (*LLNL/Univ of California, Berkeley*)

1:50 p.m.

Efficiency Comparison of Minor Actinide Burning: ADS vs. LFR, Carlo Artioli, Giacomo Grasso, Carlo Petrovich, Federico Rocchi (*ENEA*)

2:15 p.m.

Fuel Cycle Analysis of the SABR Fusion Fission Hybrid Burner Reactor, C. M. Sommer, W. M. Stacey, B. Petrovic (*Georgia Tech*)

2:40 p.m.

The Conceptual Design of ADS in CIAE, Haihong Xia, Zhixiang Zhao (*CIAE*), invited

3:05 p.m.

The Subcritical Reactor-Burners for Minor Actinides Transmutation, Leonid Ponomarev (*Kurchatov Inst*)

3:30 p.m.

Potential and Possible Strategies of Nuclear Waste Transmutation, W. Gudowski (*ISTC*), V. Ignatiev (*Kurchatov Inst*), M. Kormilitsyn (*NIJAR*), A. Lopatkin (*NIKIET*), I. Slessarev (*Kurchatov Inst*), L. Tocheny (*ISTC*), Y. Titarenko (*IATEP*)

Reactor Analysis Methods—II, sponsored by RPD; cosponsored by MCD. *Session Organizer:* Fausto Franceschini (*Westinghouse*). *Cochairs:* Baocheng Zhang (*Westinghouse*), Tomasz Kozlowski (*KTH*)

Regency Ballroom 2

1:00 p.m.

Zero Power Fast Reactor Deterministic Modeling with Heterogeneous Geometry, M. A. Smith, A. S. Mohamed, C. H. Lee, A. Marin-Lafleche, W. S. Yang (*ANL*)

1:25 p.m.

Application of the INSTANT-HPS PN Transport Code to the C5G7 Benchmark Problem, Yaqi Wang, Hongbin Zhang, Ronaldo Szilard, Richard Martineau (*INL*)

1:50 p.m.

PHISICS: A New Reactor Physics Analysis Toolkit, C. Rabiti, Y. Wang, G. Palmiotti, H. Hiruta, J. Cogliati, A. Alfonsi (*INL*)

2:15 p.m.

Validation of the Burn-up Code EVOLCODE 2.0 with Experimental Data, Francisco Álvarez-Velarde, Enrique M. González-Romero (*CIEMAT*)

2:40 p.m.

GNF Automation Tools for BWR Lattice Modeling, Walid A. Metwally, Vernon W. Mills (*GNF-Americas*), Tadashi Ikehara (*GNF-Japan*)

3:05 p.m.

CAD-Based 4-D Neutronics Simulation and Analysis for Nuclear Systems, Yican Wu, Qin Zeng, Pengcheng Long, Liqin Hu, Jia Li, Jun Zou, (*CAS/Univ Sci Technol China*)

3:30 p.m.

Development and Applications of MCAM Version 4.8 for Complex Large-Scale Nuclear Devices, Guozhong Wang, Jian Xiong (*Univ Sci Technol China*), Pengcheng Long, Jun Zou (*Univ Sci Technol China/CAS*)

Technical Sessions by Day: Wednesday

Advances in Small and Medium Sized Reactor Designs,

sponsored by RPD; cosponsored by OPD.

Session Organizers: Youssef Shatilla (*Masdar Inst of Sci Technol*), Tom Remick (*SCE*). *Cochairs:* Youssef Shatilla (*Masdar Inst of Sci Technol*), Pavel Tsvetkov (*Texas A&M*)

Regency Ballroom 3

1:00 p.m.

Simplified Neutronic Design Method for Battery Reactor Core, Hyung M. Son (*Seoul Natl Univ*), Kune Y. Suh (*Seoul Natl Univ/PHILOSOPHIA*)

1:25 p.m.

Small Integral Thorium Heavy Water System, Holly R. Trelue, D. V. Rao (*LANL*)

1:50 p.m.

Design Characteristics of the Energy Multiplier Module (EM²), Hangbok Choi, Robert W. Schleicher (*General Atomics*)

2:15 p.m.

Distributed Sensor Networks for Online 3-D In-Core Monitoring in VHTR Enviroments, Pavel V. Tsvetkov, Shannon M. Bragg-Sitton, Jesse M. Johns, Tom G. Lewis III, Ayodeji B. Alajo, Matthew P. Johnson (*Texas A&M*)

2:40 p.m.

Technical Considerations and Capabilities of a Near-Term Deployable Traveling Wave Reactor Core, N. Touran, P. Hejzlar, S. Mazurkiewicz, R. Petroski, J. Walter, C. Whitmer (*TerraPower*)

3:05 p.m.

Regulatory PSA Model for Passive SMART Integral Reactor: Insights and Issues, C. J. Lee, N. C. Cho (*KINS-Korea*), I. S. Kim (*ISSA Technol*), Y. S. Lee (*FNC Technol*)

3:30 p.m.

Non-Nuclear Testing of Space Fission Technologies at NASA MSFC, Michael G. Houts, J. Boise Pearson, Thomas J. Godfroy, (*NASA MSFC*)

Operations and Power: General—II, sponsored by OPD.

Chair: Charles C. McCarthy (*Northrop Grumman Nuclear Energy Corp*)

Atlantic Ballroom 1

1:00 p.m.

Calibration of Thermal Cross Correlation-Based Flowmeter Deployable in Nuclear Reactors, Taleb Moazzeni, Jian Ma, Yingtao Jiang (*UNLV*), William Phoenix (*INL*)

1:25 p.m.

Thermal Stratification in the RCS Hot Leg Pipes and Its Effects, B. J. Lee, H. C. Jang, Y. J. Choe, S. H. Kim, B. R. Jung, S. J. Baik (*KEPCO*)

1:50 p.m.

Cable Identification Method for Power Plants, Daisuke Shinma, Setsuo Arita (*Hitachi*), Minoru Matsuhita, Hiroshi Shoji (*GE-Hitachi Nuclear*)

2:15 p.m.

A Linear Regression Method Used for Shim Rotation Prediction of the Advanced Test Reactor, Joshua Peterson, Erich Schneider (*Univ of Texas, Austin*)

2:40 p.m.

Discrete Event Model of a U-Moly Fuel Foil Production Line at Y-12, C. van der Hoeven, E. Schneider (*Univ of Texas, Austin*)

Nuclear Communications: Getting It Right—Panel, sponsored by ETWDD. *Session Organizer:* Mimi Holland Limbach (*Potomac Communications Group*). *Chair:* Mimi Holland Limbach

Atlantic Ballroom 2

1:00 p.m.

The renewed interest in nuclear energy, nuclear science, and technology in general has many more of us telling the nuclear story than ever before. But what do we say? And how do we tell our story so that people respond to it positively? In this session we will discuss the key elements of developing compelling messages that advance our industry and avoiding communications that inadvertently generate confusion among stakeholders and the public.

PANELISTS:

- Teri Ehresman (*INL*)
- Kemal Pasamehmetoglu (*INL*)
- Michael Waldron (*FPL/NextEra Energy Corporation*)

Key Nuclear Communication Messages—Panel, sponsored by ETWDD. *Session Organizer:* Teri Ehresman (*INL*). *Chair:* Teri Ehresman (*INL*)

Atlantic Ballroom 2

2:30 p.m.

Helping to get the word out about nuclear power continues to be a communications challenge. What is the key information the public needs to know? How do we explain those messages in a manner relevant and meaningful to the public? Communications experts from the industry will share ideas on key nuclear messages and how they help to make the messages understood. Panelists will discuss what works and what doesn't in today's changing world.

PANELISTS:

- Ann Bisconti (*Bisconti Research Inc*)
- Kelle Barfield (*Entergy*)
- Cassie Hagan (*AREVA*)
- Mimi Limbach (*Potomac Communications Group Inc*)

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

Technical Sessions by Day: Wednesday/Thursday

General Thermal Hydraulics—II, sponsored by THD.

Chair: Kurshad Muftuoglu (*GE-Hitachi Nuclear*)

Atlantic Ballroom 3

1:00 p.m.

Investigation of Downward-Facing CHF with Water-Based Nanofluids for IVR, G. DeWitt (*MIT*), R. J. Park (*KAERI*), J. Buongiorno, T. McKrell, L. W. Hu (*MIT*)

1:20 p.m.

Critical Heat Flux at Low Pressure Under Natural Convection, Michael Avery, Mark Anderson, Michael Corradini (*Univ of Wisconsin, Madison*), J. E. Matos, F. E. Dunn, E. E. Feldman (*ANL*)

1:40 p.m.

An Experimental Study of Flow Boiling Critical Heat Flux Performance with Surface Wettability Concept, Seung-Jun Kim, Barclay G. Jones (*Univ of Illinois*)

2:00 p.m.

Gamma-Blind Nuclear Particle-Induced Bubble Formation in Tensioned Metastable Fluids, A. Sansone, S. Zielinski, J. A. Webster, J. Lapinskas, R. P. Taleyarkhan (*Purdue Univ*), R. C. Block (*RPI*)

2:20 p.m.

Operation of a Supercritical Fluid Compression Loop Using CO₂-Based Mixtures, T. Conboy, D. Ames, T. Lewis, S. Wright (*SNL*)

2:40 p.m.

The Performance Test of the Pilot Annular Linear Induction EM Pump, Hee Reyoung Kim, Young Bum Lee (*KAERI*)

3:00 p.m.

Fusion Blanket Analysis for LIFE, J. A. DeMuth, M. Havstad, K. J. Kramer, J. F. Latkowski, K. Morris (*LLNL*)

3:20 p.m.

Regime Transitions in a Fluidized Bed Based on Analyses of Gauge Pressure Fluctuations, Faraj Zaid, Stoyan Nedeltchev, Muthanna Al-Dahhan (*Missouri Univ Sci Tech*)

Computational Resources, sponsored by RPSD.

Session Organizer: John Hendricks (*Consultant*).

Chair: Raymond Klann (*ANL*)

Room 212/213

1:00 p.m.

MCNP6 Delayed Gamma Benchmark Using Experimental Data, T. Wilcox, M. L. Fensin, E. Pierce, V. Mozin, J. W. Durkee (*LANL*), A. W. Hunt (*Idaho State*), G. W. McKinney (*LANL*)

1:25 p.m.

MCNPX NRF Library—Release 4, Alex B. McKinney, Gregg W. McKinney, Denise B. Pelowitz, Brian J. Quiter, Alton Coalter (*LANL*)

1:50 p.m.

Performance of Hybrid Methods for a Representative Non-Proliferation Source/Detector Problem, Aaron M. Bevill (*Oregon State Univ*), Erin A. Miller (*PNNL*), Todd S. Palmer (*Oregon State Univ*)

2:15 p.m.

Progress of HUMOP: Human Automatic Modeling Program, Mengyun Cheng, Shanqing Huang (*CAS*), Jia Li, Yican Wu (*CAS/Univ Sci Technol China*)

Standards Symposium, sponsored by OPD.

Chair: Donald J. Spellman (*ORNL*)

Room 214

1:00 p.m.

This session will be a discussion of the "package" of ANS standards that most closely supports events at Japan's Fukushima plants to determine which ones may need review, update, or development. With overlapping areas of responsibilities of U.S. nuclear standards developing organizations, there must be coordination to maximize the overall value to the effort. This should be the first of many meetings and organizational venues that should occur as the many lessons learned are cataloged from the events in Japan.

PANELISTS:

- N. Prasad Kadambi (*ANSI*)
- Donald J. Spellman (*ORNL*)
- John D. Stevenson (*IAEA*)
- Additional panelist to be determined.

THURSDAY • JUNE 30, 2011

7:30 AM – 2:00 PM MEETING REGISTRATION

8:30 AM – 11:30 AM 2011 ANS ANNUAL MEETING: TECHNICAL SESSIONS

- Emerging Issues and Human Factors in Nuclear Facility Safety
- Modeling and Simulation in Fuel Cycle Separations and Waste Form Development—I
- Physics, Modeling, and Risk Assessment
- Mind the Gap: Mentoring Successes and Challenges—Panel
- Advances in Nuclear Reactor Kinetics—II
- Nuclear Data Covariance: Evaluation, Processing, and Application—II
- Nuclear Criticality Safety Standards—Forum
- Advanced/Gen-IV Reactors
- Education and Training: General
- Computational Thermal Hydraulics—II

1:00 PM – 4:00 PM 2011 ANS ANNUAL MEETING: TECHNICAL SESSIONS

- Monitoring and Regulatory Insights
- Modeling and Simulation in Fuel Cycle Separations and Waste Form Development—II
- Environmental Sciences: General
- Best Practices in Interdisciplinary Safeguards and Nonproliferation Education—Papers/Panel
- Design and Analysis for Plutonium and Minor Actinides Transmutation—IV
- Reactor Physics Design, Validation, and Operating Experience—II
- Sensitivity and Uncertainty Methodologies in Nuclear Calculations—II

THURSDAY, JUNE 30, 2011, 8:30 A.M.

Emerging Issues and Human Factors in Nuclear Facility Safety,

sponsored by NISD. Session Organizer: Larry Zull (*DNFSB*).

Chair: Herbert Massie (*DNFSB*)

Diplomat Ballroom 1

8:30 a.m.

Filtered Containment Venting Improves Safety, Tobias Zieger (*IMI Nuclear*), Salih Guentay (*Paul Scherrer Inst*)

Technical Sessions by Day: Thursday

8:55 a.m.

Lessons Learned and Design Improvements on Human Factors Engineering from MCR Survey and Inspections of OPR1000+, Ja-Kyung Kim, Jae-Hyuk Park, Dae-Sik Choi (*KEPCO*)

9:20 a.m.

Human Factors Engineering Issues for Safety-Related Operator Actions in Digital Instrumentation and Control System of APR1400, Dhong Hoon Lee, Choong Heui Jeong (*KINS*)

9:45 a.m.

Safety Review Issues on Human Factors Engineering of APR1400 During the Operating License, Dhong Hoon Lee, Choong Heui Jeong (*KINS*)

Modeling and Simulation in Fuel Cycle Separations and Waste Form Development—I

, sponsored by FCWMD.

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

Diplomat Ballroom 3

8:30 a.m.

An Overview of the Nuclear Energy Advance Modeling and Simulation (NEAMS) Safeguards and Separations Program, Pratap Sadasivan (*LANL*), David DePaoli (*ORNL*)

8:55 a.m.

Current Status of Off-Gas Modeling to Support the NEAMS Program, Veronica J. Rutledge, Daryl Haefner (*Battelle Energy Alliance/INL*)

9:20 a.m.

Simulation of Head-End Processing of Used Nuclear Fuel, C. Pereira, J. Copple, K. Frey, J. Jerden, J. Krebs (*ANL*)

9:45 a.m.

Advanced Multi-Fluid Simulations and Experiments of Flow in Liquid-Liquid Contactors, Kent E. Wardle, Candido Pereira (*ANL*)

10:10 a.m.

Computational Analysis of Flow above the Upper Weir in an Annular Centrifugal Contactor, Akshay Gandhir (*Texas A&M*), Kent E. Wardle (*ANL*)

10:35 a.m.

Progress Toward High-Fidelity Simulation of Droplet Dynamics in Contactors, Marianne M. Francois, Neil N. Carlson (*LANL*), Kevin Liu (*Texas A&M*)

Physics, Modeling, and Risk Assessment

, sponsored by NISD.

Session Organizer: Charles R. Martin (*DNFSB*). Chair: Charles R. Martin

Diplomat Ballroom 4

8:30 a.m.

On Physics Modeling and Components Development in R7 Code, A. Bui, R. R. Nourgaliev, T.-N. Dinh (*INL*)

8:55 a.m.

Effects on the Core Damage Frequency for the Change of the Common Cause Failure Parameters According to the Testing Strategies, Dae Il Kang, Kil-you Kim, Young Ho Jin (*KAERI*)

9:20 a.m.

V&V Methodology Comparisons: AIAA G-077(1998), ASME V&V 20 (2009), ASTM E1355-05a(2005), NEA/CSNI/R(2007), and NRC CSAU(1988), S. Peters, L. Tschaeppe, B. Zhang, A. Ruggles, D. Icovu (*Univ of Tennessee*)

Mind the Gap: Mentoring Successes and Challenges—Panel

, sponsored by YMG. Chair: Gale Hauck (*Westinghouse*)

Diplomat Ballroom 5

8:30 a.m.

Most everyone agrees that having a good mentor is a key factor in bridging the gaps in the workplace and moving toward a successful career. But finding and taking advantage of a mentor, or being a good mentor to others, is not an obvious proposition. This session will address successes in mentoring and challenges that are faced, in both formal and informal mentoring programs or in individual mentoring relationships.

PANELISTS:

- Kenneth Bailey (*NRC*)
- Ray Gamino (*KAPL*)
- Jeff Morris (*Browns Ferry*)
- Judith Williams (*APS*)

Advances in Nuclear Reactor Kinetics—II

, sponsored by RPD.

Session Organizers: Piero Ravetto (*Politecnico di Torino*), David Chandler (*UT/ORNL*), Akio Yamamoto (*Univ of Nagoya*), Trent Primm III (*ORNL*).

Cochairs: David Chandler (*UT/ORNL*), Piero Ravetto (*Politecnico di Torino*)

Regency Ballroom 1

8:30 a.m.

A Unified Numerical Algorithm for Space-Dependent Kinetic Equation, Tomohiro Endo, Yuichiro Ban, Akio Yamamoto (*Nagoya Univ*), invited

8:50 a.m.

An Integral Response-Based Concept for Solving the Time-Dependent Transport Equation, Justin Pounders, Farzad Rahnema (*Georgia Tech*), invited

9:10 a.m.

The Quasi-Static Method for Nuclear Reactor Kinetics: A Review and a Look Ahead, S. Dulla (*Politecnico di Torino*), E. H. Mund (*Université Libre de Bruxelles*), P. Ravetto (*Politecnico di Torino*)

9:30 a.m.

Propagation Phenomena in the Kinetics of Source-Driven Systems with a Continuous Slowing-Down Model, F. Alcaro, S. Dulla, P. Ravetto (*Politecnico di Torino*), M. Carta (*ENEA, Casaccia*)

9:50 a.m.

Parallelized Adaptive Time Stepping Using the Step Doubling Method in DeCART, Adam J. Hoffman, Brendan Kochunas, John C. Lee (*Univ of Michigan*)

Technical Sessions by Day: Thursday

10:10 a.m.

The Time-Dependent 3-D Transport Code TORT-TD: Recent Advances and Applications, A. Seubert (*GRS mbH*), invited

10:30 a.m.

Validation of Two-Step Core Kinetics Calculation Using Direct Whole Core Transport Solutions, Mathieu Hursin (*Univ of Michigan*), Han Gyu Joo (*Seoul Natl Univ*), Joo Il Yoon (*KNFC*), Thomas J. Downar (*Univ of Michigan*), invited

10:50 a.m.

A Highly Accurate Benchmark for Reactor Point Kinetics with Feedback, Barry D. Ganapol, Paolo Picca (*Univ of Arizona*), invited

Nuclear Data Covariance: Evaluation, Processing, and Application—II, sponsored by RPD; cosponsored by MCD.
Session Organizers: Luiz C. Leal (*ORNL*), Gerardo Aliberti (*ANL*).
Cochairs: Gerardo Aliberti (*ANL*), Albert Kahler III (*LANL*)

Regency Ballroom 2

8:30 a.m.

Sampling Based Nuclear Data Uncertainty Analysis in Reactor Calculations, L. Gallner, M. Klein, B. Krzykacz-Hausmann, A. Pautz, W. Zwermann, (*GRS mbH*), invited

8:55 a.m.

Equivalence of the Adjoint-Weighted Monte Carlo Perturbation Method and the First Order Differential Operator Sampling Method with Fission Source Perturbation, Hyung Jin Shim, Chang Hyo Kim (*Seoul Natl Univ*), invited

9:20 a.m.

The SUSD3D Code for Cross-Section Sensitivity and Uncertainty Analysis—Recent Development, Ivan Kodeli (*Jožef Stefan Inst*), invited

9:45 a.m.

Fission Spectrum Sensitivity Coefficients for Integral Parameter Uncertainty Estimation, Gerardo Aliberti, Won Sik Yang, Richard D. McKnight (*ANL*)

10:10 a.m.

Evaluation of Uncertainties for the Prompt Fission Neutron Spectrum and Average Neutron Multiplicity Using the Los Alamos Model, Michael E. Rising (*Univ of New Mexico*), Patrick Talou (*LANL*), Anil K. Prinja (*Univ of New Mexico*)

10:35 a.m.

Self-Shielding Effects for Uncertainty Analysis, M. L. Williams, B. T. Rearden (*ORNL*)

Nuclear Criticality Safety Standards—Forum, sponsored by NCSD.
Session Organizer: Davis Reed (*ORNL*). *Chair:* Davis Reed

Regency Ballroom 3

8:30 a.m.

Speakers to be determined.

Advanced /Gen-IV Reactors, sponsored by OPD.

Chair: Art Wharton (*Westinghouse*)

Atlantic Ballroom 1

8:30 a.m.

Nuclear Tanker Producing Liquid Fuels from Air and Water, John M. Galle-Bishop, Charles W. Forsberg, Michael Driscoll (*MIT*)

8:55 a.m.

Safety Analysis of VHTRs with MED Desalination Plants, Ho Sik Kim, Hee Cheon No, Hyung Gon Jin (*KAIST*)

9:20 a.m.

Use of DRACS to Enhance HTGRs Passive Safety and Economy, Haihua Zhao, Hongbin Zhang, Ling Zou (*INL*)

9:45 a.m.

Experimental Study on Fracture of Oxidized Support Column in VHTR, Byung Ha Park, Hee Cheon No (*KAIST*)

10:10 a.m.

System Analysis of Molten Salt Reactor Fuel Reprocessing, Jan Uhlír (*NRI*)

10:35 a.m.

Preliminary Fault Tree Analysis and FMEA of High Efficiency Channel in a CANDU-SCWR, I. Ituen, M. M. Malik, J. Luxat, D. Novog (*McMaster Univ*)

11:00 a.m.

Reactivity Analysis for TRISO Fuel Particles Containing a Burnable Poison Layer, J. Washington, J. King, Z. Shayer (*CSM*)

Education and Training: General, sponsored by ETWDD.

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

Chair: John S. Bennion

Atlantic Ballroom 2

8:30 a.m.

A Nuclear Engineering Master with a National Laboratory as Research Base, R. Chawla (*EPFL*), J.-M. Cavedon (*Scherer Inst*), H.-M. Prasser (*ETHZ*)

8:55 a.m.

New Ways of Implementing the AGN-201M Training Nuclear Reactor in Nuclear Engineering Curricula, Radek Škoda, Kenneth L. Peddicord, Christopher Crouch (*Texas A&M*)

9:20 a.m.

Subcritical Assembly at Missouri University of Science and Technology, L. P. Tucker, S. Usman (*Missouri Univ Sci Technol*)

9:45 a.m.

Undergraduate Research Opportunities in Neutron Activation Analysis for Local, Regional, and International Students, S. Landsberger, T. Tipping (*Univ of Texas, Austin*), D. Tamalis (*Florida Memorial Univ*), J. Jones (*Huston-Tillotson Univ*), S. Alexander (*Southwestern Univ*), G. Ban (*École Supérieure Nationale d'Ingénieurs de Caen*)

Technical Sessions by Day: Thursday

10:10 a.m.

An Updated Syllabus for the Penn State Graduate Fuel Management Course, K. Ivanov (*Penn State*), S. Khodyachykh (*Siemens AG*), S. Levine (*Penn State*)

Computational Thermal Hydraulics—II, sponsored by THD.

Cochairs: Brian Woods (*Oregon State Univ*), Yassin Hassan (*Texas A&M*)

Atlantic Ballroom 3

8:30 a.m.

Heat Transfer Predictions by CFD and Heat Transfer Correlations, Constantine P. Tzanos (*ANL*)

8:55 a.m.

COMSOL-Based Multiphysics Simulations to Support HFIR's Conversion to LEU Fuel, Prashant K. Jain, James D. Freels, David H. Cook (*ORNL*)

9:20 a.m.

Investigating Air Ingress Accident in HTR-Core by CFD, Chen-Wei Chi, Yuh-Ming Ferng, Bau-Shei Pei, Meng-Jen Wang, Jenq-Horng Liang (*Natl Tsing Hua Univ*)

9:45 a.m.

Transient Analysis of Cooling System of ADS, Indu Kumari, A. K. Trivedi, Ashok Khanna, Prabhat Munshi (*IIT-India*), P. Satyamurthy (*BARC*)

10:10 a.m.

Effect of Inclined Angles on the Mixing of Turbulent Supercritical Water in a T-Junction, Lin Bu, Jiyun Zhao (*ERIAN*)

THURSDAY, JUNE 30, 2011, 1:00 P.M.

Monitoring and Regulatory Insights, sponsored by NISD.

Session Organizer: Amy Hull (*NRC*). *Chair:* John Abrefah (*DNFSB*)

Diplomat Ballroom 1

1:00 p.m.

Regulatory Frameworks for On-Line Maintenance, S. K. Ahn, C. J. Lee, K. M. Oh (*KINS-Korea*)

1:25 p.m.

Sensor Data Recovery in an Asynchronous Condition Monitoring Environment, Jian Sun, Haitao Liao, Belle Upadhyaya (*Univ of Tennessee*)

1:50 p.m.

Implementation Verification Reviews—Ensuring DOE Safety Basis Controls Are Effectively Implemented, Donald F. Owen (*DNFSB*)

2:15 p.m.

Suggestions on the Regulation for Nuclear Criticality Safety of Korean Pyroprocess Facility, Sukhoon Kim, Juyoul Kim (*FNC Technol*), Seungyoung Jeong (*KINS*)

Modeling and Simulation in Fuel Cycle Separations and Waste Form Development—II, sponsored by FCWMD.

Chair: Kent E. Wardle (*ANL*)

Diplomat Ballroom 3

1:00 p.m.

Using SXFIT to Model Liquid-Liquid Distribution Systems: Initial Results for the Extraction of a Trivalent Metal by Dialkyl Phosphoric Acid, Peter Zalupski (*INL*), Michael Gray, Mikael Nilsson (*Univ of California, Irvine*), Laetitia Delmau (*ORNL*)

1:25 p.m.

Separations and Safeguards Performance Model, Benjamin B. Cipiti (*SNL*)

1:50 p.m.

Use of Bayesian Time Series Analysis for Material Accountability, Bobby D. Middleton (*SNL*)

2:15 p.m.

Neutron Balance for Integrated Safeguards of a Reprocessing Facility, Holly R. Trelue, Howard O. Menlove, Richard J. Kapernick, Pratap Sadasivan (*LANL*)

2:40 p.m.

Open Architecture and Modular Paradigm of Cyclus, a Fuel Cycle Simulation Code, Kathryn D. Huff, Paul P. H. Wilson, Matthew J. Gidden (*Univ of Wisconsin, Madison*)

Environmental Sciences: General, sponsored by ESD.

Chair: Gene Carpenter (*NRC*)

Diplomat Ballroom 4

1:00 p.m.

Incentives for Reversible Hydrogen Electrolyzer-Fuel Cells for Peak Electricity, Geoffrey Haratyk, Charles W. Forsberg (*MIT*)

1:25 p.m.

Behaviors of Selenium Oxoanions in the Near-Field Condition, Seung Soo Kim, Je Ho Min, Min Hoon Baik (*KAERI*)

1:50 p.m.

Climate Change Mitigation's Benefit by the Nuclear Power Plants Operation, Ivan Vassilev Ivanov (*Tech Univ of Sofia*)

2:15 p.m.

Methodology of Steady-State Flammable Gas Concentrations for Radioactive Waste at Hanford, T. A. Hu (*DOE/ORP*)

Best Practices in Interdisciplinary Safeguards and Nonproliferation Education—Papers/Panel, sponsored by FCWMD.

Session Organizer: Shaheen Dewji (*Georgia Inst of Technology*).

Chair: Michaela Eddy (*Univ of Michigan*)

Diplomat Ballroom 5

1:00 p.m.

Building Foundations in Nuclear Nonproliferation Expertise, J. Christian Kessler (*NorthRaven Consulting LLC*), Amy Seward (*PNNL*)

Technical Sessions by Day: Thursday

1:25 p.m.

Benchmarking Safeguards and Nonproliferation Education: A Heuristic Approach, Shaheen A. Dewji, Nolan E. Hertel (*Georgia Tech*)

1:50 p.m.

PANEL DISCUSSION

The expansion of nuclear energy worldwide brings growing concern that peaceful programs will feed nuclear-weapons programs. These concerns drive an increased interest in exploring the technological demands and policy implications of safeguards and nonproliferation programs. Contemporary events demand that students possess a dual understanding of both the technical and policy implications associated with the expansion of nuclear power domestically and globally. This panel session will discuss existing and developing safeguards and nonproliferation training and education programs that strive toward a balance of science and policy understanding.

PANELISTS:

- Jeff Jay (*SRNS*)
- Melissa Scholz (*NNSA*)

Design and Analysis for Plutonium and Minor Actinides

Transmutation—IV, sponsored by RPD; cosponsored by FCWMD.

Session Organizers: Mark D. DeHart (*INL*), Ivan G. Maldonado (*UT*), Fausto Franceschini (*Westinghouse*). *Cochairs:* Adrei Rineiski (*Karlsruhe Inst of Technol*), Adam Hoffman (*Univ of Michigan*)

Regency Ballroom 1

1:00 p.m.

A Candidate Dispersion TRU Fuel Design for Fast Reactor Fuel, Mark D. DeHart, Hongbin Zhang, Eric L. Shaber (*INL*)

1:25 p.m.

Studies of Plutonium-238 Production at the High Flux Isotope Reactor, Oscar Lastres, David Chandler (*Univ of Tennessee*), Joshua J. Jarrell (*ORNL*), G. Ivan Maldonado (*Univ of Tennessee*)

1:50 p.m.

Evaluation of Disposition Options for the Special Actinides in the Mark-42 Target Materials, Brad D. Patton, Charles W. Alexander, Emory D. Collins, Robert T. Jubin, Sharon M. Robinson, Robert M. Wham (*ORNL*)

2:15 p.m.

Sodium Void Effect Reduction and Minor Actinide Incineration in ESRF, A. Rineiski, B. Vezzoni, D. Zhang, X.-N. Chen, F. Gabrielli, M. Marchetti (*KIT*)

2:40 p.m.

Molten Salt Reactor for TRU Transmutation Without and With Th-U Support, V. Ignatiev, O. Feynberg (*Kurchatov Inst*), invited

Reactor Physics Design, Validation, and Operating Experience—II

sponsored by RPD.

Session Organizer: Fausto Franceschini (*Westinghouse*).

Cochairs: Paolo Ferroni (*Westinghouse*), Ivan Maldonado (*Univ of Tennessee*)

Regency Ballroom 2

1:00 p.m.

Limitation of Control Rod Modeling with Current BWR Methods, Koroush Shirvan, Mujid Kazimi (*MIT*)

1:25 p.m.

Validation of Neutronics Programs for the OPAL Reactor, J. C. Osborn, T. Ersez, W. Lu (*ANSTO*)

1:50 p.m.

Modeling of the High Flux Isotope Reactor Cycle 400 with KENO-VI, Susan Hogle, G. Ivan Maldonado (*Univ of Tennessee*)

2:15 p.m.

Neutron Flux Characterization at the Missouri S&T Nuclear Reactor, Z. A. Kulage, C. Castaño, G. E. Mueller, S. Usman (*Missouri Univ Sci Technol*)

2:40 p.m.

CPCS Operability Test and the Nonlinear Behavior of DNBR with Tcold: Shin-Kori Nuclear Power Plant Unit 1 Startup Test Experiences, Young Jae Choi, Hae Nam Yang (*KEPCO*)

Sensitivity and Uncertainty Methodologies in Nuclear

Calculations—II, sponsored by MCD; cosponsored by RPD.

Session Organizers: Cristian Rabitì (*INL*), Hany S. Abdel-Khalik (*NCSU*), Luiz Leal (*ORNL*). *Chair:* Patrick Brantley (*LLNL*)

Regency Ballroom 3

1:00 p.m.

Update on the OECD LWR Uncertainty Analysis in Modeling (UAM) Benchmark, S. Kamerow, M. Avramova, K. Ivanov (*Penn State*), invited

1:25 p.m.

Impact of Nuclear Data Uncertainties in the Phase-1B Benchmark, O. Cabellos, J. S. Martinez, C. J. Díez (*Univ Politécnica de Madrid*), invited

1:50 p.m.

Uncertainty Quantification Techniques of SCALE/TSUNAMI, B. T. Rearden, D. E. Mueller (*ORNL*), invited

2:15 p.m.

ESM-Based Regularized Hessian Construction Algorithm, Youngsuk Bang, Hany S. Abdel-Khalik (*NCSU*)

DOE Workshop: “NCSP Accomplishments”

Friday, July 1, 2011
8:00 a.m. – 2:30 p.m.
Location: Diplomat Ballroom 1 & 2

AGENDA:

TIME	TOPIC	PRESENTER
8:00	Opening Remarks	Dr. Jerry N. McKamy, <i>DOE Nuclear Criticality Safety Program Manager</i>
8:15	Current CEF/DAF Operational Update and Schedule	Bill Myers Steve Clement
8:35	US–France Joint Experiments Program	Dr. Jerry N. McKamy, <i>DOE Nuclear Criticality Safety Program Manager</i>
8:50	Open Discussion	
9:00	Draft Five Year Schedule of Prioitized NCSP Experiements	Nichole Ellis
9:15	EM Experimental Accomplishments and Needs	Bob Wilson
9:25	Open Discussion	
9:35	BREAK	
9:50	Nuclear Accident Dosimetry Exercises at CEA–Valduc	Andrew Wysong
10:10	Accomplishments of the Matériaux en Interaction et Réflexion Toutes Epaisseurs (MITRE) Program During 2010	John Bess
10:20	Open Discussion	
10:30	Accomplishments of the International Criticality Safety Benchmark Evaluation Project (ICSBEP) During 2010	John Bess
10:45	IRPhEP	Adolf Garcia
10:55	SCALE Developments for Criticality Safety	Brad Rearden
11:20	Open Discussion	
11:30	LUNCH	
12:30	MCNP Developments	Forrest Brown
12:55	Open Discussion	
13:05	Nuclear Data Accomplishments for FY 2010	Dick McKnight
13:25	ARH-600, Actinide Integral Cross Section Progress and Anomolies Report	Ray Puigh
13:40	Results from the Seven Percent Critical Experiment	Gary Harms
13:55	NCSP Training and Education Program	Calvin Hopper
14:30	Open Discussion and ADJOURN	Jim Felty

Committee Meetings

NATIONAL COMMITTEES

Accreditation Policies and Procedures

SUNDAY, 11:00 A.M. – 12:00 P.M.
Location: Room 205

ANS Business Meeting

WEDNESDAY, 4:00 P.M. – 4:30 P.M.
Location: Grand Ballroom West

Board of Directors

Professional Division Reports

WEDNESDAY, 4:30 P.M. – 6:00 P.M.
Location: Grand Ballroom West

Board of Directors

THURSDAY, 8:00 A.M. – 5:00 P.M.
Location: Grand Ballroom West

Bylaws and Rules

SUNDAY, 4:30 P.M. – 6:00 P.M.
Location: Room 201

Finance

TUESDAY, 6:30 P.M. – 8:30 P.M.
Location: Room 303

Honors and Awards

MONDAY, 2:00 P.M. – 4:00 P.M.
Location: Room 312

International

SUNDAY, 11:30 A.M. – 2:30 P.M.
Location: Diplomat Ballroom 3

Local Sections/Workshop

SUNDAY, 8:00 A.M. – 12:00 P.M.
Location: Diplomat Ballroom 1

Membership

SUNDAY, 11:00 A.M. – 12:00 P.M.
Location: Room 305

National Program Committee (NPC) Program

WEDNESDAY, 4:00 P.M. – 7:00 P.M.
Location: Grand Ballroom East

Screening and International

SUNDAY, 10:00 A.M. – 12:00 P.M.
Location: Diplomat Ballroom 2

NEED

SUNDAY, 7:30 P.M. – 9:00 P.M.
Location: Room 204

Planning

SUNDAY, 2:00 P.M. – 6:00 P.M.
Location: Diplomat Ballroom 5

Professional Development Workshop

TUESDAY, 7:30 A.M. – 8:30 A.M.
Location: Room 308

Professional Divisions

Committee Meeting

WEDNESDAY, 6:00 P.M. – 7:00 P.M.
Location: Grand Ballroom West

Training Workshop

SATURDAY, 5:00 P.M. – 6:30 P.M.
Location: Room 303

Professional Engineering Exam

Committee Meeting

SUNDAY, 3:00 P.M. – 5:00 P.M.
Location: Room 313

Exam Writers Group

SATURDAY, 6:00 P.M. – 10:00 P.M.
Location: Room 213

Professional Women in ANS

MONDAY, 11:30 A.M. – 1:00 P.M.
Location: Room 312

Public Information

SUNDAY, 4:00 P.M. – 6:00 P.M.
Location: Diplomat Ballroom 3

Public Policy

WEDNESDAY, 11:30 A.M. – 1:30 P.M.
Location: Room 307

Publications Steering

Book Publishing

SUNDAY, 11:00 A.M. – 12:30 P.M.
Location: Room 204

Meetings, Proceedings and Transactions

SUNDAY, 9:00 A.M. – 10:00 A.M.
Location: Room 204

Nuclear News Editorial Advisory

SUNDAY, 4:00 P.M. – 5:30 P.M.
Location: Room 307

Publications Steering

MONDAY, 2:00 P.M. – 4:00 P.M.
Location: Room 313

Technical Journals

SUNDAY, 1:00 P.M. – 4:00 P.M.
Location: Room 305

Scholarship Policy and Coordination

MONDAY, 12:00 P.M. – 1:00 P.M.
Location: Room 302

Student Sections

Executive

MONDAY, 6:00 P.M. – 7:00 P.M.
Location: Diplomat Ballroom 1

Student Sections

Reports & Roundtable Discussion

MONDAY, 7:00 P.M. – 8:00 P.M.
Location: Diplomat Ballroom 1

SPECIAL COMMITTEES

Integration Oversight

TUESDAY, 9:00 A.M. – 11:00 A.M.
Location: Room 305

Nuclear Nonproliferation

SUNDAY, 2:00 P.M. – 4:00 P.M.
Location: Room 308

OTHER COMMITTEES

18th PBNC Organizing Committee

MONDAY, 4:00 P.M. – 5:00 P.M.
Location: Room 201

CNF

MONDAY, 7:30 P.M. – 10:00 P.M.
Location: Room 302

CSSG

THURSDAY, 1:00 P.M. – 4:00 P.M.
Location: Room 316

Eagle Alliance Board of Directors

SUNDAY, 1:00 P.M. – 3:00 P.M.
Location: Room 316

ICAPP 2012 Planning Meeting

SUNDAY, 3:30 P.M. – 5:30 P.M.
Location: Room 302

Mathematics and Computation/ Reactor Physics/ Radiation Protection & Shielding Joint Benchmark Meeting

SUNDAY, 11:00 A.M. – 1:00 P.M.
Location: Room 202

NEDHO

SUNDAY, 4:00 P.M. – 6:00 P.M.
Location: Atlantic Ballroom 3

NPIC & HMIT 2012

Planning Meeting
WEDNESDAY, 7:00 A.M. – 8:30 A.M.
Location: Room 305

NURETH-14 Organizing Committee

SUNDAY, 1:30 P.M. – 2:30 P.M.
Location: Room 312

PNC

SUNDAY, 8:00 AM – 5:00 PM
Location: Diplomat Ballroom 4

Past Presidents' Meeting

TUESDAY, 7:00 AM – 9:00 AM
Location: Room 312

PHYSOR 2012 –

Technical Program Committee
MONDAY, 4:00 PM – 5:00 PM
Location: Room 308

RPSD/NIFFTE

TUESDAY, 1:00 PM – 7:00 PM
Location: Room 302

UWC 2011 Planning Committee

SUNDAY, 12:00 P.M. – 1:00 P.M.
Location: Room 312

DIVISION COMMITTEES

Accelerator Applications

Executive

MONDAY, 11:30 A.M. – 1:00 P.M.
Location: Room 305

Aerospace Nuclear Science and Technologies

SUNDAY, 12:00 P.M. – 2:00 P.M.
Location: Room 313

Biology and Medicine

Committee of the Whole

SUNDAY, 4:00 P.M. – 5:30 P.M.
Location: Room 212

Computational Medical Physics Working Group

SUNDAY, 10:00 A.M. – 11:00 A.M.
Location: Room 213

Joint Program Committee – I&R and B&M

SUNDAY, 1:30 P.M. – 2:30 P.M.
Location: Room 307

Decommissioning, Decontamination and Reutilization

Executive Committee Meeting

SUNDAY, 4:30 P.M. – 5:30 P.M.
Location: Atlantic Ballroom 1

Program Committee Meeting

SUNDAY, 3:30 P.M. – 4:30 P.M.
Location: Atlantic Ballroom 1

Education, Training, and Workforce Development

Alpha Nu Sigma

SUNDAY, 1:00 P.M. – 2:00 P.M.
Location: Room 308

Executive/Membership/

Honors and Awards

SUNDAY, 1:30 P.M. – 4:00 P.M.
Location: Room 212

Program

SUNDAY, 10:30 A.M. – 12:00 P.M.
Location: Room 212

University/Industry/ Government Relations

SUNDAY, 9:30 A.M. – 10:30 A.M.
Location: Room 212

Committee Meetings

Environmental Sciences

ESD Special Committee on Climate Change

SUNDAY, 1:00 P.M. – 3:00 P.M.
Location: Room 201

Executive

SUNDAY, 10:00 A.M. – 12:00 P.M.
Location: Room 201

Nuclear Production of Hydrogen Working Group

SUNDAY, 12:00 P.M. – 1:00 P.M.
Location: Room 201

Program

SUNDAY, 8:30 A.M. – 10:00 A.M.
Location: Room 201

Fuel Cycle and Waste Management

Executive

SUNDAY, 1:00 P.M. – 2:30 P.M.
Location: Atlantic Ballroom 1

Program

SUNDAY, 12:00 P.M. – 1:00 P.M.
Location: Atlantic Ballroom 1

Technical Operating and Standards Committee

SUNDAY, 2:30 P.M. – 3:30 P.M.
Location: Atlantic Ballroom 1

Fusion Energy

Executive

SUNDAY, 3:00 P.M. – 5:00 P.M.
Location: Room 205

Human Factors, Instrumentation, and Controls

Executive/Program

SUNDAY, 12:00 P.M. – 2:30 P.M.
Location: Room 303

Isotopes and Radiation

Executive

SUNDAY, 2:30 P.M. – 4:00 P.M.
Location: Room 307

Joint Program Committee – I&R and B&M

SUNDAY, 1:30 P.M. – 2:30 P.M.
Location: Room 307

Materials Science and Technology

Executive

MONDAY, 7:00 P.M. – 9:00 P.M.
Location: Room 305

Mathematics and Computation

Computational Medical Physics

Working Group

SUNDAY, 10:00 A.M. – 11:00 A.M.
Location: Room 202

Mathematics and Computation

Executive

SUNDAY, 2:00 P.M. – 4:00 P.M.
Location: Room 202

Program

SUNDAY, 1:00 P.M. – 2:00 P.M.
Location: Room 202

Nuclear Criticality Safety

Education Meeting

SUNDAY, 1:00 P.M. – 2:00 P.M.
Location: Atlantic Ballroom 2

Executive

SUNDAY, 3:00 P.M. – 4:30 P.M.
Location: Atlantic Ballroom 2

Program

SUNDAY, 2:00 P.M. – 3:00 P.M.
Location: Atlantic Ballroom 2

Nuclear Installation Safety

Executive

SUNDAY, 7:30 P.M. – 9:00 P.M.
Location: Room 213

Program

SUNDAY, 4:00 P.M. – 6:00 P.M.
Location: Room 213

Operations and Power

Executive

SUNDAY, 4:15 P.M. – 6:00 P.M.
Location: Diplomat Ballroom 2

Nuclear Construction Working Group

SUNDAY, 1:00 P.M. – 2:00 P.M.
Location: Diplomat Ballroom 2

Program

SUNDAY, 3:15 P.M. – 4:15 P.M.
Location: Diplomat Ballroom 2

Small Modular Reactors

SUNDAY, 2:00 P.M. – 3:15 P.M.
Location: Diplomat Ballroom 2

Radiation Protection and Shielding

Executive

SUNDAY, 1:30 P.M. – 2:30 P.M.
Location: Room 205

Program

SUNDAY, 12:30 P.M. – 1:30 P.M.
Location: Room 205

Shielding Standards

SUNDAY, 12:00 P.M. – 12:30 P.M.
Location: Room 205

Reactor Physics

Executive

SUNDAY, 4:00 P.M. – 6:00 P.M.
Location: Room 204

Goals and Planning

SUNDAY, 1:00 P.M. – 2:00 P.M.
Location: Room 204

Reactor Physics

Honors and Awards

SUNDAY, 10:00 A.M. – 11:00 A.M.
Location: Room 204

Program

SUNDAY, 2:00 P.M. – 4:00 P.M.
Location: Room 204

Robotics and Remote Systems

Executive

SUNDAY, 12:00 P.M. – 4:00 P.M.
Location: Room 213

Thermal Hydraulics

Executive

SUNDAY, 4:30 P.M. – 6:00 P.M.
Location: Room 312

Program

SUNDAY, 2:30 P.M. – 4:30 P.M.
Location: Room 312

Young Member Group

Executive Committee

MONDAY, 11:30 A.M. – 1:00 P.M.
Location: Room 308

STANDARDS COMMITTEES

ANS Standards Board

TUESDAY, 9:00 A.M. – 5:00 P.M.
Location: Room 314

ANS-8.1

SUNDAY, 8:00 A.M. – 12:00 P.M.
Location: Room 316

TUESDAY, 7:00 A.M. – 8:30 A.M.

Location: Room 316

ANS-8.20

SUNDAY, 9:00 A.M. – 12:00 P.M.
Location: Room 302

ANS-8.27

WEDNESDAY, 8:00 A.M. – 5:00 P.M.
Location: Room 316

ANS-8.29

MONDAY, 7:00 A.M. – 8:30 A.M.
Location: Room 308

ANS-10.7

SATURDAY, 8:30 A.M. – 4:30 P.M.
Location: Room 316

ANS-19

SUNDAY, 9:30 A.M. – 11:00 A.M.
Location: Room 312

ANS-19.1

SUNDAY, 11:00 A.M. – 12:00 P.M.
Location: Room 312

ANS-54.1

WEDNESDAY, 8:00 A.M. – 5:00 P.M.
Location: Room 302

ANS-58.16

TUESDAY, 8:00 A.M. – 5:00 P.M.
Location: Room 313

WEDNESDAY, 8:00 A.M. – 5:00 P.M.

Location: Room 313

THURSDAY, 8:00 A.M. – 5:00 P.M.

Location: Room 313

NFSC

MONDAY, 7:30 A.M. – 4:00 P.M.
Location: Room 314

ANS Organization Members

A

AECL
Alaron Corporation
Alpiq Suisse SA
Altran Solutions Corp.
Ameren-UE
American Electric Power Service Corp.
American Nuclear Insurers
ANATECH Corporation
AREVA NC
AREVA NP
Arizona Public Service Co.
AT&F Nuclear, Inc.
ATC-Nuclear

B

Babcock & Wilcox Company
Barnhart Nuclear Services
Battelle Memorial Institute
Bechtel Power Corp.
Bigge Crane and Rigging Co.
BKW FMB Energie Ltd.
Black & Veatch
R. Brooks Associates, Inc.
Burkhalter Rigging, Inc.
Burns & Roe Enterprises, Inc.

C

Central Research Laboratories
Ceradyne Boron Products
Constellation Energy
CP&L and Florida Power-Progress
Energy Companies

D

Dade Moeller & Associates
Del Mar Avionics
Detroit Edison Company
Dominion Generation
DuBose National Energy Service
Duke Energy Corporation

E

Energy Future Holdings Corp.
(Comanche Peak Nuclear Power Plant)
EnergySolutions
Energy Northwest
Entergy Operations Inc.
Enterprise Informatics

E

EPRI
EXCEL Services Corporation
Exelon Nuclear Co.

F

Federation of Electric Power
Companies of Japan
FENOC
Florida Power & Light

G

General Atomics
GE Hitachi Nuclear Energy

H

Hayward Tyler, Inc.
Huron Consulting Group

I

Indiana Michigan Power Co./
D.C. Cook Nuclear Power Plant
Institute of Nuclear Safety Systems, Inc.

K

Kernkraftwerk Leibstadt AG
Kinectrics Inc.
Kinometrics Inc.
Korea Atomic Industrial Forum, Inc.
Krsko Nuclear Power Plant
KSB, Inc.

L

Lawrence Livermore National
Laboratory
Los Alamos National Laboratory
L-3 Communications MAPPS Inc.

M

Major Tool & Machine, Inc.
Marshfield - Div. of Mars Metal Company
McCallum-Turner, Inc.
Mega-Tech Services, LLC
Mitsubishi Nuclear Energy Systems, Inc.

N

Navarro Research & Engineering
Nebraska Public Power District
NEI
Newport News Shipbuilding
Nexus Technical Services Corporation
Nordostschweizerische Kraftwerke AG

Nuclear Fuel Services, Inc.
Nuclear Plant Journal

O

Omaha Public Power District
Ontario Power Generation
Overly Manufacturing Company

P

Pacific Gas & Electric Co.
Pakistan Atomic Energy Commission
PaR Nuclear, Inc.
PaR Systems, Inc.
Phoenix Contact Inc.
PPL Susquehanna, LLC
Private Fuel Storage, LLC

R

Reef Industries, Inc.
Rigging International
ROS, Inc. (Remote Ocean Systems, Inc.)

S

SAIC
Sandia National Laboratories
Sargent & Lundy
Southern California Edison
Southern Carolina Alliance
Southern Nuclear Operating Co.
Stone & Webster Engineering Inc./
The Shaw Group

T

Technical Associates
Terra Power, LLC
Tetra Tech
Thermo Fisher Scientific
Toshiba America Nuclear Energy
Corporation
TradeTech, LLC
TVA Nuclear Power Group
TW Metals

U

UR-Energy USA Inc.
URS Washington Division
USEC Inc.

W

Westinghouse Electric Corp.
Wyle Laboratories

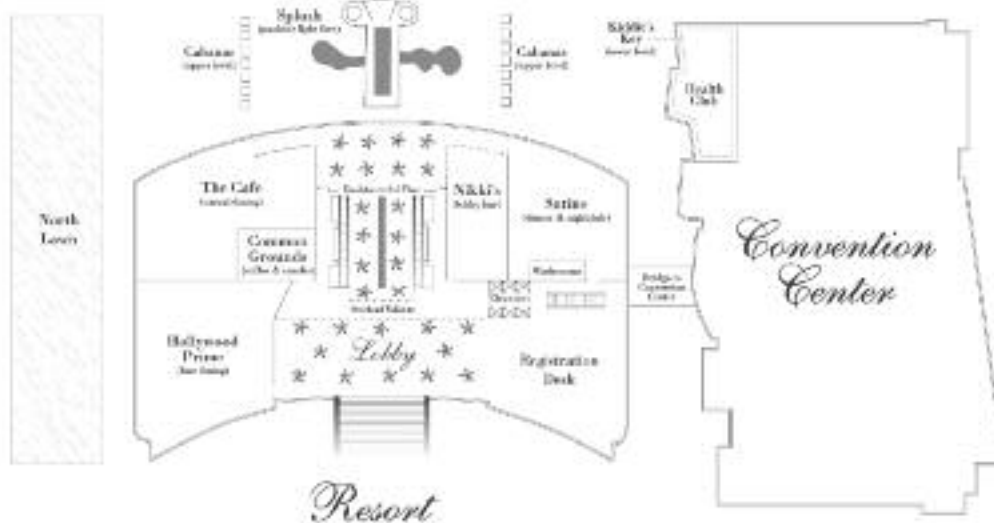
About the American Nuclear Society

The American Nuclear Society (ANS) is an international, not-for-profit, scientific and educational organization consisting of about 11,000 individual members, more than 1,600 organizations, 80 Organization Members, 20 professional divisions/technical groups, 51 U.S. and 9 non-U.S. local sections/affiliated societies, 14 plant branches, and 34 student sections. ANS also maintains about 30 formal agreements for cooperation with international organizations.

The Society's main objectives are the advancement of engineering and science relating to the atomic nucleus, and to the integration of the science and management disciplines constituting nuclear science and technology. Other purposes are to encourage research, establish scholarships, disseminate information, inform the general public about nuclear-related activities, conduct meetings at which scientific and technical papers are presented, and cooperate with government agencies, educational institutions, and other organizations having similar purposes.



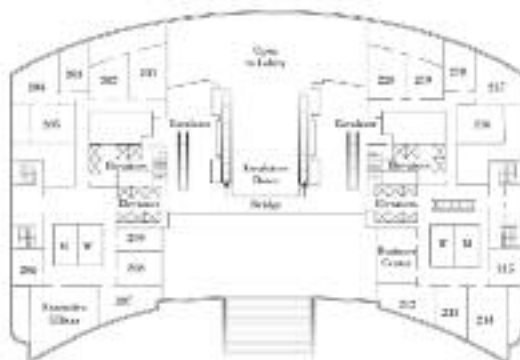
**THE WESTIN DIPLOMAT
RESORT & SPA**
Melbourne, Florida



Resort

Convention Center

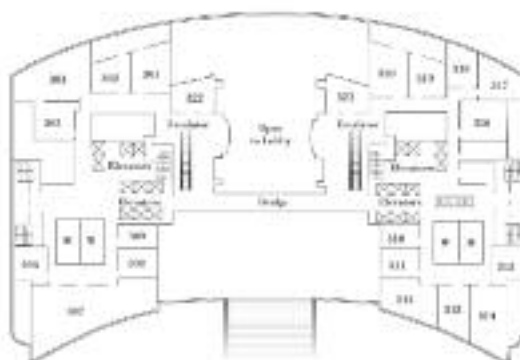
*Second Floor Hotel
Breakout Meeting Space*



Grand Ballroom Level



*Third Floor Hotel
Breakout Meeting Space*



Great Hall Level

