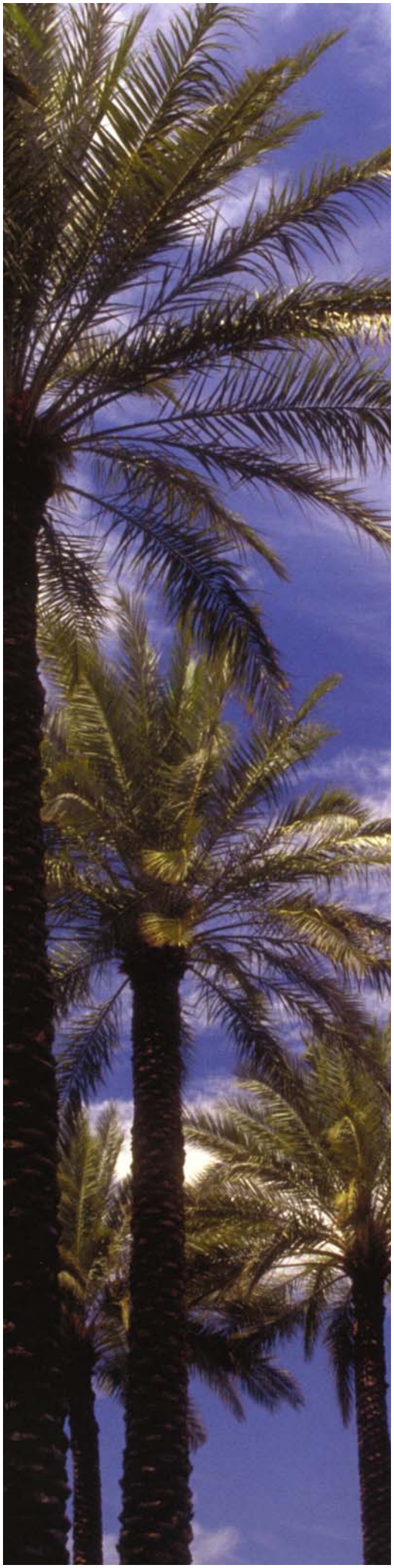

June 8-12, 2008 • Anaheim, California • Disneyland Hotel

AMERICAN NUCLEAR SOCIETY: 2008 ANNUAL MEETING

"Nuclear Science and Technology: Now Arriving on Main Street"

EMBEDDED TOPICAL MEETINGS:

- 2008 International Congress on Advances in Nuclear Power Plants (ICAPP'08)
- Isotopes for Medicine and Industry
- Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors (NFSM)

PROFESSIONAL DEVELOPMENT WORKSHOPS:

- Preparing for the Nuclear Engineering Professional Engineering Exam"
- Digital Instrumentation and Control and Human Machine Interface (ICHMI)

OFFICIAL PROGRAM

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

2008 ANS Annual Meeting

"Nuclear Science and Technology: Now Arriving on Main Street"

Embedded Topical Meeting:

2008 International Congress on Advances in Nuclear Power Plants (ICAPP'08)

Embedded Topical Meeting:

Isotopes for Medicine and Industry

Embedded Topical Meeting:

Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors (NFSM)

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AMERICAN NUCLEAR SOCIETY: 2008 ANNUAL MEETING

"Nuclear Science and Technology: Now Arriving on Main Street"

EMBEDDED TOPICAL MEETINGS:

2008 International Congress on Advances in Nuclear Power Plants (ICAPP'08)

Isotopes for Medicine and Industry

Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors (NFSM)

June 8-12, 2008 • Anaheim, California • Disneyland Hotel

UPDATED: June 6, 2008

Come join us on Wednesday, June 11, 2008, for an evening at the Bowers Museum. Additional details are on page 8.

SATURDAY, JUNE 7, 2008

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

SUNDAY, JUNE 8, 2008

8:00 AM – 5:00 PM	Professional Development Workshop: "Digital Instrumentation and Control and Human Machine Interface (ICHMI)"
8:30 AM – 5:00 PM	Professional Development Workshop: "Preparing for the Nuclear Engineering Professional Engineering Exam"
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 9, 2008

8:00 AM – 10:00 AM	Spouse/Guest Hospitality
8:30 AM – 11:30 AM	2008 ANS Annual Meeting: Plenary Session: "Nuclear Science and Technology: Now Arriving on Main Street"
10:00 AM – 3:00 PM	Spouse/Guest Tour: "San Juan Mission Tour and Shopping in Old Town"
11:30 AM – 1:00 PM	Operations and Power Division Luncheon
1:00 PM – 2:30 PM	2008 ANS Annual Meeting: ANS President's Special Session: "Getting the Word Out"
2:30 PM – 4:00 PM	2008 ANS Annual Meeting: Technical Sessions
2:30 PM – 4:00 PM	ICAPP 2008 Embedded Topical: Technical Sessions
2:30 PM – 4:00 PM	NFSM Embedded Topical: Opening Plenary Session
3:00 PM – 5:00 PM	Isotopes Embedded Topical: Opening Plenary Session
4:00 PM – 5:00 PM	ANS Business Meeting
4:00 PM – 6:00 PM	ICAPP 2008 Embedded Topical: Plenary Session # 1
6:45 PM – 10:00 PM	Evening Event: "Rat Pack Party – An Evening with the Kings of Cool"

TUESDAY, JUNE 10, 2008

8:00 AM – 10:00 AM	Spouse/Guest Hospitality
8:00 AM – 10:00 AM	ICAPP 2008 Embedded Topical: Plenary Session # 2
8:30 AM – 11:30 AM	2008 ANS Annual Meeting: Technical Sessions
8:30 AM – 11:30 AM	Isotopes Embedded Topical: Technical Sessions
8:30 AM – 11:30 AM	NFSM Embedded Topical: Technical Session
10:00 AM – 12:00 PM	ICAPP 2008 Embedded Topical: Technical Sessions
10:00 AM – 3:00 PM	Spouse/Guest Tour: "The J. Paul Getty Museum"
11:30 AM – 1:00 PM	ANS Honors and Awards Luncheon

TUESDAY, JUNE 10, 2008 (continued)

1:00 PM – 4:00 PM	2008 ANS Annual Meeting: Technical Sessions
1:00 PM – 4:00 PM	ICAPP 2008 Embedded Topical: Technical Sessions
1:00 PM – 4:00 PM	Isotopes Embedded Topical: Technical Sessions
1:00 PM – 5:00 PM	NFSM Embedded Topical: Technical Session
4:00 PM – 6:00 PM	ICAPP 2008 Embedded Topical: Plenary Session # 3

WEDNESDAY, JUNE 11, 2008

8:00 AM – 10:00 AM	Spouse/Guest Hospitality
8:00 AM – 10:00 AM	ICAPP 2008 Embedded Topical: Plenary Session # 4
8:30 AM – 11:30 AM	2008 ANS Annual Meeting: Technical Sessions
8:30 AM – 11:30 AM	Isotopes Embedded Topical: Technical Sessions
8:30 AM – 11:30 AM	NFSM Embedded Topical: Technical Session
10:00 AM – 12:00 PM	ICAPP 2008 Embedded Topical: Technical Sessions
1:00 PM – 4:00 PM	2008 ANS Annual Meeting: Technical Sessions
1:00 PM – 4:00 PM	ICAPP 2008 Embedded Topical: Technical Sessions
1:00 PM – 4:00 PM	Isotopes Embedded Topical: Technical Sessions
1:00 PM – 4:00 PM	NFSM Embedded Topical: Technical Session
4:00 PM – 6:00 PM	ICAPP 2008 Embedded Topical: Plenary Session # 5
4:00 PM – 6:00 PM	ANS Public Communications Workshop: Focus on Communications – Speaking with the Media
6:30 PM – 10:30 PM	Evening Event: "An Evening at the Bowers Museum of Cultural Art"
7:00 PM – 9:00 PM	NFSM Embedded Topical: Poster Session

THURSDAY, JUNE 12, 2008

8:00 AM – 10:00 AM	ICAPP 2008 Embedded Topical: Plenary Session # 6
8:30 AM – 11:30 AM	2008 ANS Annual Meeting: Technical Sessions
8:30 AM – 11:30 AM	NFSM Embedded Topical: Technical Session
9:30 AM – 4:30 PM	Technical Tour: Jet Propulsion Laboratory (JPL)
10:00 AM – 12:00 PM	ICAPP 2008 Embedded Topical: Technical Sessions
1:00 PM – 3:30 PM	ICAPP 2008 Embedded Topical: Technical Sessions
1:00 PM – 4:00 PM	2008 ANS Annual Meeting: Technical Sessions
1:00 PM – 4:00 PM	NFSM Embedded Topical: Technical Session
1:00 PM – 6:00 PM	ICAPP 2008 Embedded Topical: Tutorial

FRIDAY, JUNE 13, 2008

8:00 AM – 5:00 PM	EM-60 Workshop

GENERAL CHAIR:
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Southern California Edison

ASSISTANT GENERAL CHAIR:
Brian Katz
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ASSISTANT GENERAL CHAIR:
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Southern California Edison

"Nuclear Science and Technology: Now Arriving on Main Street"

The Disneyland Hotel

MEETING INFORMATION

The 2008 ANS Annual Meeting will be held June 8-12, 2008, in Anaheim, California. There will be three embedded topical meetings held in conjunction with the 2008 ANS Annual Meeting:
2008 International Congress on Advances in Nuclear Power Plants (ICAPP '08); Isotopes for Medicine and Industry; and Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors (NFSM). There will also be two Professional Development Workshops held in conjunction with the 2008 ANS Annual Meeting: "Preparing for the Nuclear Engineering Professional Engineering Exam" and "Instrumentation and Control and Human Machine Interface."

ACCOMMODATIONS/ HOTEL INFORMATION

The Disneyland Hotel will be the location for the 2008 ANS Annual Meeting, where all activities, technical sessions and governance committee meetings will take place.

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 p.m. – 1:30 p.m. on Sunday, June 8th, in the Disney Exhibit Hall Meeting Room C.

STUDENT ASSISTANT PROGRAM

Attendance at the 2008 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 8th, 4:00 p.m. – 5:00 p.m. in the Wonder Garden Room.

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.

ANS REGISTRATION

ANS Registration will be located in the Disneyland Center Lounge of the hotel on Saturday, June 7, 2008 through Thursday, June 12, 2008. Meeting and workshop 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, workshops and events.

REGISTRATION HOURS:

SATURDAY, JUNE 7, 2008
2:00 p.m. – 5:00 p.m.

SUNDAY, JUNE 8, 2008
7:30 a.m. – 9:30 a.m.
(Registration for workshop participants only!)
11:00 a.m. – 7:00 p.m.

MONDAY, JUNE 9, 2008
7:30 p.m. – 5:00 p.m.

TUESDAY, JUNE 10, 2008
7:30 p.m. – 5:00 p.m.

WEDNESDAY, JUNE 11, 2008
7:30 p.m. – 5:00 p.m.

THURSDAY, JUNE 12, 2008
7:30 p.m. – 2:00 p.m.

The student headquarters room will be located in the Fantasy B room.

MENTORING PROGRAM

A special mentoring program will be held from 5:00 p.m. – 6:00 p.m. on Sunday, June 8th, in the Wonder Garden Room.

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 Disneyland Center Lounge of the hotel during registration hours.

A Speakers' Preview Room, the Fantasy A room of the hotel, will be available during the following hours:

SUNDAY, JUNE 8, 2008
7:30 a.m. – 3:00 p.m.

MONDAY, JUNE 9, 2008
7:00 a.m. – 4:00 p.m.

TUESDAY, JUNE 10, 2008
7:00 a.m. – 4:00 p.m.

WEDNESDAY, JUNE 11, 2008
7:00 a.m. – 4:00 p.m.

THURSDAY, JUNE 12, 2008
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: Fantasy C Room

ANS SECRETARIAT

Location: Frontier Room

ANS MEDIA CENTER

MONDAY, JUNE 9, 2008
7:45 a.m. – 4:00 p.m.

TUESDAY, JUNE 10, 2008
8:00 a.m. – 4:00 p.m.

WEDNESDAY, JUNE 11, 2008
8:00 a.m. – 4:00 p.m.

Location: Tomorrow Room

ANS MEDIA WORKROOM

The Public Information Committee will offer individualized sessions to ANS members interested in honing their communication skills. Conducted by experienced media professionals, coaching sessions will feature hands-on practice using videotaped interviews followed by constructive critiques. Candid feedback will help ANS members cultivate their abilities and tell their stories, respond to tough questions, and confidently share their knowledge with news media, policy makers and the public. Sessions will be held Monday through Wednesday between 11:30 a.m. – 1:00 p.m. in the Media Center (Tomorrow Room).

ANS PUBLIC COMMUNICATIONS WORKSHOP

"Focus on Communications: Speaking with the Media"
WEDNESDAY, JUNE 11, 2008
4:00 p.m. – 6:00 p.m.
Location: Dreams D

SPOUSE/GUEST HOSPITALITY

Spouse/guest hospitality breakfast will be served from 8:00 a.m. – 10:00 a.m., Monday, June 9, 2008, through Wednesday, June 11, 2008, in the Sleeping Beauty Pavilion. 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 10th, there will be a noncompetitive run starting at 6:00 a.m. from the front entrance of the hotel. Bring your running shoes!

PROFESSIONAL DEVELOPMENT WORKSHOPS

PLEASE NOTE: Registration for the workshop(s) is separate from, and in addition to, the meeting registration fee.

Professional Development Workshop #1:
"Preparing for the Nuclear Engineering Professional Engineering Exam"
SUNDAY, JUNE 8, 2008
9:00 a.m. – 5:00 p.m.
Location: Dreams G Room

Registration price for the workshop is $450 for ANS members and $550 for non-members.

Professional Development Workshop #2:
"Digital Instrumentation and Control and Human Machine Interface (ICHMI)"
SUNDAY, JUNE 8, 2008
8:00 a.m. – 5:00 p.m.
Location: Dreams H Room

Registration price for the workshop is $450 for ANS members and $550 for non-members.

EM-60 Workshop

FRIDAY, JUNE 13, 2008
8:00 a.m. – 5:00 p.m.
Location: Dreams G Room

There is no registration fee for this workshop. Please turn to page 70 for additional information.

Southern California at its best is what you'll find in Anaheim/Orange County. This area celebrates its own brand of lifestyle, fun and sun.

The region spans 782 square miles (1,258 kilometers) from the local rugged mountains to its 42 miles (68 kilometers) of picturesque coastline filled with inviting public beaches and unforgettable Pacific sunsets.

Orange County's 34 cities each have their own distinctive personality. You'll find trendy restaurants, world-class shopping, eclectic arts and culture, enticing beaches, world famous attractions and posh resorts all within Anaheim and Orange County.

There is a spectacular new resort destination in Southern California — The Anaheim Resort district. This area has redefined the word "resort" and has reinvented itself as a major tourist destination. This 1100-acre garden district encompasses the redesigned and expanded Anaheim Convention Center and The Disneyland® Resort, which features the original Disneyland®, the thrilling new theme park — Disney's California Adventure™, and the lively Downtown Disney, a new shopping, dining and entertainment district.

Laguna Beach — Located mid-way between Los Angeles and San Diego, the city of Laguna Beach is a seaside village of 25,000-plus residents that includes hundreds of local working artists and unique gift shops.

Newport Beach, nestled 50 miles south of Los Angeles and 85 miles north of San Diego, is approximately 50 square miles, of which 25 are water.

The Downtown Disney® District is the place to go for a wide range of fun for the whole family—from high-energy, interactive sports games at ESPN Zone®, to a movie at AMC® Theatres, to an evening of great food and live music at House of Blues® or Ralph Brennan's Jazz Kitchen®. Everyone will find a favorite among the eclectic lineup of entertainment venues, restaurants and one-of-a-kind shops here. Plus, there's no entrance fee to the Downtown Disney® District, and everything is just steps away from both theme parks—right in the heart of the Disneyland® Resort.

CONFERENCE LUNCHEONS

Operations and Power Division Luncheon

MONDAY, JUNE 9, 2008
11:30 A.M. – 1:00 P.M.
LOCATION:
Wonder Garden Room

Tickets can be purchased at the ANS Registration Desk for $52.

Honors and Awards Luncheon

TUESDAY, JUNE 10, 2008
11:30 A.M. – 1:00 P.M.
LOCATION:
Sleeping Beauty Pavilion

Plan to attend the Honors and Awards Luncheon held to recognize the outstanding efforts of the award winners and to celebrate their accomplishments.

Tickets can be purchased at the ANS Registration Desk for $52.

Rat Pack Party – *An Evening with the Kings of Cool*

MONDAY, JUNE 9, 2008
6:45 P.M. – 10:00 P.M.
LOCATION:
Stage 17 —
Disney's California Adventure

Re-live the fabulous world of the legendary 1950s "Sunset Strip" Hollywood nightclubs like the Trocadero and the Stardust Ballroom!

Glitz, glamour and Hollywood royalty come alive in a chic retro setting filled with swingin' music from the '50s, celebrity look-alikes and, the highlight of the evening – an authentic recreation of the infamous "Rat Pack" takes the stage!

This is a delightfully dizzy music and joke tribute to Sammy, Dean, Frank and the rest of the boys.

PLEASE NOTE:

There will be no transportation provided for this event, as it is being held on Disney property.

Please meet at the entrance of Disney's California Adventure at the "C" by 6:45 PM. Escorts will be waiting to guide you to Stage 17. Please have your ticket and be prepared to have bags checked. Escorts and access to the event will be available until 7:30 PM.

Tickets can be purchased at the ANS Registration Desk for $55.

They were the coolest cats of all time... Frank Sinatra, Sammy Davis, Jr., and Dean Martin... better known as The Rat Pack! They ruled Las Vegas and Hollywood during the 1950's-1960's.

Have you ever wondered about the origin of the name, Rat Pack?

The Rat Pack had its roots in a group of Humphrey Bogart's friends, including Frank Sinatra, Judy Garland, and other Hollywood entertainers.

After Bogie, Frank, and a couple of cronies returned home from a late night of carousing, Bogart's wife, actress Lauren Bacall, jokingly said: "You look like a *** rat pack!"

— Taken from the Ask Yahoo website: http://ask.yahoo.com/20011210.html

EVENING EVENTS

PLEASE NOTE:

- ***You must be registered for the meeting to attend evening events.***
- ***The times listed are departure times and return times to/from the hotel. Busses will pick up and drop off on the 2nd driveway of the front entrance of the Disneyland Hotel.***

ANS President's Reception

SUNDAY, JUNE 8, 2008
6:00 P.M. – 7:30 P.M.
LOCATION:
The Dreams Lawn

The ANS President's Reception kicks off the meeting on Sunday, June 8, 2008. One ticket to the ANS President's Reception is included in the full meeting registration fee.

Additional tickets can be purchased at the ANS Registration Desk for $80.

An Evening at the Bowers Museum of Cultural Art

WEDNESDAY, JUNE 11, 2008
6:30 P.M. – 10:30 P.M.

One of Southern California's finest museums and Orange County's largest, the Bowers Museum is one of the only museums in the United States devoted to promoting human understanding through art. Its state of the art special exhibition and collection storage facilities enable the Bowers to present world class exhibitions and preserve collections of art for future generations.

This extraordinary experience begins in the museum's historic garden courtyard where you will be greeted by the soothing sounds of a Spanish Guitarist. The classic 1930's Mission style courtyard is the perfect setting for the cocktail reception.

While sipping cocktails, you will have an opportunity to view the museum's latest exhibit – China's Terra Cotta Warriors: Guardians of the First Emperor.

The exhibition of 120 objects will include 20 complete life-sized terra cotta figures and feature new discoveries of court officials, acrobats and generals. Equally exciting and probably most dramatic are the inclusion of two recently discovered, half-sized bronze chariots and life-size bronze animals that were found in what would have been gardens within the tomb complex belonging to China's first emperor, Qin Shi Huang. Many believe this is the most significant archaeological discovery of the 20th century!

Next, you will make your way to the John M. Lee Court where an elegant dinner awaits.

An event space with galleries in three directions and a lovely court yard with fountains in the other, Lee Court will set an impressive forum for the evening's festivities.

Tickets can be purchased at the ANS Registration Desk for $55.

The museum's latest exhibit – China's Terra Cotta Warriors: Guardians of the First Emperor.

SPOUSE/GUEST TOURS

San Juan Mission Tour and Shopping in Old Town

MONDAY, JUNE 9, 2008
10:00 A.M. – 3:00 P.M.

The most beautiful and best known of the California Missions, Old Mission San Juan Capistrano is only a short trip south. An expert tour guide will greet you upon arrival at the gates of the mission. Within minutes, you will discover the enchantment of this living historical landmark, as the docent led tour leads you through pristine gardens, soldier barracks, and beautiful archeological monuments.

At the conclusion of your tour, you will be taken to Old Town Capistrano where you can enjoy the historic shopping district and get a true sense of San Juan Capistrano.

You will be sure to enjoy the selection of stores, as they range from vintage antique stores to trend setting designer boutiques and galleries showcasing San Juan Capistrano.

We'll tell you all the secret jewels of this unforgettable town… even where to relax after shopping and sightseeing for a cup of tea at an old Victorian tea house (a local favorite) or where to enjoy a glass of California Chardonnay at one of the Southland's best wine bars… all within walking distance!

Truly it will be a day not forgotten!

Tickets can be purchased at the ANS Registration Desk for $45.

Mission San Juan Capistrano

Photograph © Tom Remick

The natives of Capistrano Valley were known as the Acjachemen (A HACH A MEN), until the mission was established. It became a custom that the Indians surrounding the mission adopt the name of that mission thus the local Acjachemen nation became known as Juanenos.

The J. Paul Getty Museum

TUESDAY, JUNE 10, 2008
10:00 A.M. – 3:00 P.M.

Set high on a dramatic hilltop overlooking Los Angeles, the Getty Center sits on 110 acres of the Santa Monica Mountains, surrounded by gardens and terraces that provide sweeping views of Los Angeles, the mountains and the ocean. The gallery space at the J. Paul Getty Museum at The Getty Center is more than twice the size of the original museum in Malibu. Five two-story pavilions, interconnected around an open central courtyard, house the ever-changing exhibitions and the expanding permanent collections of pre-20th-century European paintings, drawings, illuminated manuscripts, sculptures, decorative arts and 19th and 20th-century American and European photographs.

Upon arrival, you will board a tram which will take you to the top of the hill to the museum's buildings. You will have the opportunity to view paintings exhibited in rooms with natural skylights.

You can view works of art chronologically, or enter pavilions through the courtyard in any sequence you wish, listening to information about each art piece through audio headsets that will enhance the tour experience.

You will leave the Getty in amazement of the museum's finest works of art and architecture.

Tickets can be purchased at the ANS Registration Desk for $50.

PHOTOS: Top Right – J Paul Getty Museum, Los Angeles; Bottom Right – Cafe at the Getty Center, Los Angeles

TECHNICAL TOUR

Jet Propulsion Laboratory (JPL)

THURSDAY, JUNE 12, 2008
9:30 AM - 4:30 PM

THIS TOUR IS SOLD-OUT!

The maximum number of tour participants is limited to 20 people.

PLEASE NOTE:

- All US citizens over 18 years of age visiting JPL **MUST** present official, government-issued photo identification (driver's license or passport) before being allowed entry.
- **All non-US citizens (Foreign Nationals) over 18 years of age MUST present either a passport or resident visa (green card) before being allowed entry.**
- Individuals without appropriate identification will **not** be admitted to the Laboratory.
- The tour includes considerable walking and stair climbing. Dress comfortably and appropriately for the weather. Wheelchairs can be accommodated with prior notice. Cameras are allowed on the tour and photographs may be taken at any area visited.

Tickets are no longer available. This tour is SOLD-OUT!

(Lunch is not included in the price of the tour ticket – however, you can purchase lunch in the JPL cafeteria.)

(Asterisks indicate special sessions)

Track 1: Nuclear Science and Technology: Now Arriving on Main Street

*Opening Plenary: Nuclear Science and Technology: Now Arriving on Main Street, Mon. a.m. (8:30-11:30 a.m.)

*ANS President's Special Session: Getting the Word Out, Mon. p.m. (1:00-2:30 p.m.)

The Potential for International Collaborations on Closed Fuel Cycle Demonstrations and Implementation–Panel, Mon. p.m.

Environmental Benefits of Sustainable Nuclear Science and Technology, Mon. p.m.

*Status of Nuclear Energy Programs of Nations–Panel, Tues. a.m.

Nuclear Methods in Materials Research—I, Wed. a.m.

Nuclear Methods in Materials Research—II, Wed. p.m.

Reactor Physics Design, Validation, and Operating Experience, Wed. p.m.

Track 2: Nuclear Power Plant Design, Construction, and Management

Report from the Committee on New Construction–Panel, Mon. p.m.

Advanced Light Water Reactor Design and Construction Advances–Panel, Tues. a.m.

Digital Information and Control for New Plants–Papers/Panel, Tues. p.m.

Aging Management Issues—"Life Beyond 60"–Panel, Wed. a.m.

Control Strategies in Next Generation Reactors, Wed. p.m.

Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—I, Thurs. a.m.

Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—II, Thurs. p.m.

Track 3: Fuel Cycle and Waste Management Technology

Advanced Head-End Improvements for Processing Spent Nuclear Fuels, Tues. a.m.

Recycle of Reusable Components in Spent Nuclear Fuel, Tues. a.m.

Advanced Separation Technologies for Spent Nuclear Fuel or Radioactive Waste Treatment, Tues. a.m.

Fuel Cycle Waste Forms and Strategies, Wed. p.m.

Track 3: Fuel Cycle and Waste Management Technology (continued)

Decommissioning, Decontamination, and Reutilization Technologies–Panel, Thurs. a.m.

Effects of New Fuel Cycles on Low-Level, Transuranic, and High-Level Waste Repositories, Thurs. a.m.

Uranium Enrichment and Nonproliferation Challenges in the Nuclear Renaissance–Panel, Thurs. a.m.

Process Monitoring and Event Detection for Enhancing Nuclear Nonproliferation, Thurs. p.m.

Track 4: Nuclear Facility and Criticality Safety

The VERCORS and MASCA Severe Accident Experiment Programs, Mon. p.m.

Data, Analysis, and Operations for Nuclear Criticality Safety—I, Mon. p.m.

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

Data, Analysis, and Operations for Nuclear Criticality Safety—III, Thurs. p.m.

The ARTIST Experiment and Analysis Program—I, Tues. a.m.

The ARTIST Experiment and Analysis Program—II, Tues. p.m.

In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/Paper—I, Tues. a.m.

In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/Paper—II, Tues. p.m.

The PHEBUS Experiment and Analysis Program—I, Wed. a.m.

The PHEBUS Experiment and Analysis Program—II, Wed. p.m.

ANSI/ANS Standard for Criticality Safety Engineer Training and Qualification–Panel, Wed. a.m.

Modeling, Analysis, and Licensing Issues Related to Common-Cause Failure in Digital Instrumentation and Control Systems for Digital Upgrades from Analog Systems, Wed. a.m.

Safety of Spent Nuclear Fuel Transport–Panel, Wed. a.m.

Advances in Fixed Neutron Absorber Applications, Wed. p.m.

Human Reliability and Probabilistic Risk Assessments, Thurs. a.m.

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

Criticality Safety and Nuclear Packaging, Thurs. a.m.

Current Issues in Nuclear Facility Safety, Thurs. p.m.

Track 5: Environmental Science and Technology

Nonelectrical Applications of Nuclear Power–Panel, Tues. a.m.

Best of DD&R 2007, Tues. p.m.

Current Issues in Environmental Restoration and Decommissioning, Wed. a.m.

Track 6: Nonpower and Medical Applications of Radiation

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

Isotopes and Radiation: General—II, Tues. a.m.

Neutron Depth Profiling: Facilities and Applications, Tues. p.m.

Biology and Medicine: General, Thurs. a.m.

Track 7: Nuclear Science and Engineering

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

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

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

Current Issues in Computational Methods–Roundtable, Mon. p.m.

Core Design Development: Current Issues and Their Impacts–Panel, Mon. p.m.

Thermal Hydraulics Aspects of Nuclear Hydrogen Systems–Panel, Tues. a.m.

Computational Resources for Radiation Modeling, Tues. a.m.

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

Transport Methods: General, Tues. a.m.

Reactor Analysis Methods, Tues. a.m.

Two-Phase Flow Experimentation, Tues. p.m.

Computational and Mathematical Modeling for Radiation Detection and Measurement—I, Tues. p.m.

Computational and Mathematical Modeling for Radiation Detection and Measurement—II, Wed. p.m.

Advancements in Multi-Physics Reactor Simulation, Tues. p.m.

General Thermal Hydraulics—In Memory of Professor Gunol Kojasoy, Wed. a.m.

Computational Methods: General, Wed. a.m.

Reactor Physics: General—I, Wed. a.m.

Track 7: Nuclear Science and Engineering (continued)

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

Computational Fluid Dynamics Analysis of Rod Bundles, Wed. p.m.

NJOY–Tutorial, Wed. p.m.

Introduction to Monte Carlo–Tutorial, Thurs a.m.

ENDF/B-VII.0 and JEFF-3.1: Introduction and Validation, Thurs. a.m.

Monte Carlo Burnup/Transmutation–Tutorial, Thurs. p.m.

Track 8: Advanced Energy Research and Emerging Technologies

Highlights of AccApp '07–Panel, Tues. p.m.

Advanced/Gen-IV Reactor Innovations and Advancements—I, Thurs a.m.

Advanced/Gen-IV Reactor Innovations and Advancements—II, Thurs. p.m.

Track 9: Education, Training, and Communication with the Public

Focus on Communications—I: Nuclear Pop Culture–Panel, Mon. p.m.

Focus on Communications—II: Pronuclear Activism–Panel, Tues. p.m.

Training for New Reactors and Tomorrow's Workforce, Tues. a.m.

Research by U.S. Department of Energy–Sponsored Students, Tues. p.m.

Innovations in Nuclear Engineering Education, Wed. a.m.

Developments in Nuclear Talent Pipeline and Workforce Planning–Panel, Wed. p.m.

Track 10: Nuclear Security and Emergency Response

Detection Technologies for Homeland Security Applications, Tues. p.m.

Track 11: Professional Development

RADTRAN: What It Is and What It Does–Tutorial, Wed. p.m.

Neutron Activation Analysis: Status After Five Decades–Tutorial, Thurs. p.m.

(Asterisks indicate special sessions. Parentheses indicate cosponsorship)

Special Sessions

*Opening Plenary: Nuclear Science and Technology: Now Arriving on Main Street, Mon. a.m. (8:30-11:30 a.m.)

*ANS President's Special Session: Getting the Word Out, Mon. p.m. (1:00-2:30 p.m.)

*Status of Nuclear Energy Programs of Nations–Panel, [International Nuclear Societies Council (INSC)], Tues. a.m.

Accelerator Applications (AAD)

Highlights of AccApp '07–Panel, Tues. p.m.

Biology and Medicine (BMD)

(Neutron Depth Profiling: Facilities and Applications, Tues. p.m.)

Biology and Medicine: General, Thurs. a.m.

Neutron Activation Analysis: Status After Five Decades–Tutorial, Thurs. p.m.

Decommissioning, Decontamination, and Reutilization (DDRD)

(Best of DD&R 2007, Tues. p.m.)

(Current Issues in Environmental Restoration and Decommissioning, Wed. a.m.)

Decommissioning, Decontamination, and Reutilization Technologies–Panel, Thurs. a.m.

Education and Training (ETD)

Focus on Communications—I: Nuclear Pop Culture–Panel, Mon. p.m.

Focus on Communications—II: Pronuclear Activism–Panel, Tues. p.m.

Training for New Reactors and Tomorrow's Workforce, Tues. a.m.

Research by U.S. Department of Energy–Sponsored Students, Tues. p.m.

Innovations in Nuclear Engineering Education, Wed. a.m.

Developments in Nuclear Talent Pipeline and Workforce Planning–Panel, Wed. p.m.

(Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—I, Thurs. a.m.)

(Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—II, Thurs. p.m.)

Environmental Sciences (ESD)

Environmental Benefits of Sustainable Nuclear Science and Technology, Mon. p.m.

Nonelectrical Applications of Nuclear Power–Panel, Tues. a.m.

Best of DD&R 2007, Tues. p.m.

Current Issues in Environmental Restoration and Decommissioning, Wed. a.m.

RADTRAN: What It Is and What It Does–Tutorial, Wed. p.m.

Fuel Cycle and Waste Management (FCWMD)

The Potential for International Collaborations on Closed Fuel Cycle Demonstrations and Implementation–Panel, Mon. p.m.

Advanced Head-End Improvements for Processing Spent Nuclear Fuels, Tues. a.m.

Recycle of Reusable Components in Spent Nuclear Fuel, Tues. a.m.

Advanced Separation Technologies for Spent Nuclear Fuel or Radioactive Waste Treatment, Tues. a.m.

Safety of Spent Nuclear Fuel Transport–Panel, Wed. a.m.

Fuel Cycle Waste Forms and Strategies, Wed. p.m.

Effects of New Fuel Cycles on Low-Level, Transuranic, and High-Level Waste Repositories, Thurs. a.m.

Uranium Enrichment and Nonproliferation Challenges in the Nuclear Renaissance–Panel [in collaboration with the Special Committee on Nuclear Nonproliferation (SCNN)], Thurs. a.m.

Process Monitoring and Event Detection for Enhancing Nuclear Nonproliferation (in collaboration with SCNN), Thurs. p.m.

Human Factors (HFD)

(Digital Information and Control for New Plants–Papers/Panel, Tues. p.m.)

Isotopes and Radiation (IRD)

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

Isotopes and Radiation: General—II, Tues. a.m.

Neutron Depth Profiling: Facilities and Applications, Tues. p.m.

(Detection Technologies for Homeland Security Applications, Tues. p.m.)

Nuclear Methods in Materials Research—I, Wed. a.m.

Nuclear Methods in Materials Research—II, Wed. p.m.

(Neutron Activation Analysis: Status After Five Decades–Tutorial, Thurs. p.m.)

Mathematics and Computation (MCD)

Current Issues in Computational Methods–Roundtable, Mon. p.m.

Transport Methods: General, Tues. a.m.

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

Computational and Mathematical Modeling for Radiation Detection and Measurement—I, Tues. p.m.

Computational and Mathematical Modeling for Radiation Detection and Measurement—II, Wed. p.m.

(Advancements in Multi-Physics Reactor Simulation, Tues. p.m.)

Computational Methods: General, Wed. a.m.

Nuclear Criticality Safety (NCSD)

Data, Analysis, and Operations for Nuclear Criticality Safety—I, Mon. p.m.

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

Data, Analysis, and Operations for Nuclear Criticality Safety—III, Thurs. p.m.

Nuclear Criticality Safety (NCSD) (continued)

In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/Paper–I, Tues. a.m.

In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/Paper–II, Tues. p.m.

ANSI/ANS Standard for Criticality Safety Engineer Training and Qualification–Panel, Wed. a.m.

Advances in Fixed Neutron Absorber Applications, Wed. p.m.

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

Criticality Safety and Nuclear Packaging, Thurs. a.m.

Nuclear Installations Safety (NISD)

The VERCORS and MASCA Severe Accident Experiment Programs, Mon. p.m.

The ARTIST Experiment and Analysis Program—I, Tues. a.m.

The ARTIST Experiment and Analysis Program—II, Tues. p.m.

The PHEBUS Experiment and Analysis Program—I, Wed. a.m.

The PHEBUS Experiment and Analysis Program—II, Wed. p.m.

Modeling, Analysis, and Licensing Issues Related to Common-Cause Failure in Digital Instrumentation and Control Systems for Digital Upgrades from Analog Systems, Wed. a.m.

Human Reliability and Probabilistic Risk Assessments, Thurs. a.m.

Current Issues in Nuclear Facility Safety, Thurs. p.m.

Operations and Power (OPD)

(Core Design Development: Current Issues and Their Impacts–Panel, Mon. p.m.)

Report from the Committee on New Construction–Panel, Mon. p.m.

(Training for New Reactors and Tomorrow's Workforce, Tues. a.m.)

Advanced Light Water Reactor Design and Construction Advances–Panel, Tues. a.m.

Digital Information and Control for New Plants–Papers/Panel, Tues. p.m.

Aging Management Issues—"Life Beyond 60"–Panel, Wed. a.m.

Control Strategies in Next Generation Reactors, Wed. p.m.

Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—I, Thurs. a.m.

Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—II, Thurs. p.m.

Advanced/Gen-IV Reactor Innovations and Advancements—I, Thurs. a.m.

Advanced/Gen-IV Reactor Innovations and Advancements—II, Thurs. p.m.

Radiation Protection and Shielding (RPSD)

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

Computational Resources for Radiation Modeling, Tues. a.m.

Radiation Protection and Shielding (RPSD) (continued)

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

Detection Technologies for Homeland Security Applications, Tues. p.m.

NJOY–Tutorial, Wed. p.m.

Introduction to Monte Carlo–Tutorial, Thurs. a.m.

Monte Carlo Burnup/Transmutation–Tutorial, Thurs. p.m.

Reactor Physics (RPD)

Core Design Development: Current Issues and Their Impacts–Panel, Mon. p.m.

(Transport Methods: General, Tues. a.m.)

Reactor Analysis Methods, Tues. a.m.

Advancements in Multi-Physics Reactor Simulation, Tues. p.m.

Reactor Physics: General—I, Wed. a.m.

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

Reactor Physics Design, Validation, and Operating Experience, Wed. p.m.

ENDF/B-VII.0 and JEFF-3.1: Introduction and Validation, Thurs. a.m.

(Monte Carlo Burnup/Transmutation–Tutorial, Thurs. p.m.)

Thermal Hydraulics (THD)

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

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

Thermal Hydraulics Aspects of Nuclear Hydrogen Systems–Panel, Tues. a.m.

Two-Phase Flow Experimentation, Tues. p.m.

General Thermal Hydraulics—In Memory of Professor Gunol Kojasoy, Wed. a.m.

Computational Fluid Dynamics Analysis of Rod Bundles, Wed. p.m.

Young Members Group (YMG)

(Data, Analysis, and Operations for Nuclear Criticality Safety—I, Mon. p.m.)

(Data, Analysis, and Operations for Nuclear Criticality Safety—II, Wed. p.m.)

(Data, Analysis, and Operations for Nuclear Criticality Safety—III, Thurs. p.m.)

(Core Design Development: Current Issues and Their Impacts–Panel, Mon. p.m.)

(Research by U.S. Department of Energy–Sponsored Students, Tues. p.m.)

(Focus on Communications—II: Pronuclear Activism–Panel, Tues. p.m.)

(Introduction to Monte Carlo–Tutorial, Thurs. a.m.)

(Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—I, Thurs. a.m.)

(Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—II, Thurs. p.m.)

CONDENSED MEETING SCHEDULE

ROOM	MONDAY, JUNE 9, 2008			TUESDAY, JUNE 10, 2008	
	8:30 AM – 11:30 AM	1:00 PM – 2:30 PM	2:30 PM – 4:00 PM	8:30 AM – 11:30 AM	1:00 PM – 4:00 PM
Disney Grand Ballroom	Opening Plenary: Nuclear Science and Technology: Now Arriving on Main Street	ANS President's Special Session: Getting the Word Out			
Dreams A			Computational Thermal Hydraulics—I	Thermal Hydraulics Aspects of Nuclear Hydrogen Systems–Panel	Two-Phase Flow Experimentation
Dreams D			Isotopes and Radiation: General—I	Isotopes and Radiation: General—II	Neutron Depth Profiling: Facilities and Applications
Dreams G			The VERCORS and MASCA Severe Accident Experiment Programs	The ARTIST Experiment and Analysis Program—I	The ARTIST Experiment and Analysis Program—II
Dreams H			Data, Analysis, and Operations for Nuclear Criticality Safety–I	In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/ Paper—I	In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/ Paper—II
Wonder A			Current Topics in Radiation Protection and Shielding–Roundtable	Computational Resources for Radiation Modeling --- Radiation Protection and Shielding: General	Detection Technologies for Homeland Security Applications
Wonder B			The Potential for International Collaborations on Closed Fuel Cycle Demonstrations and Implementation–Panel	Advanced Head-End Improvements for Processing Spent Nuclear Fuels --- Recycle of Reusable Components in Spent Nuclear Fuel --- Advanced Separation Technologies for Spent Nuclear Fuel or Radioactive Waste Treatment	Highlights of AccApp '07–Panel
Wonder D			Focus on Communications—I: Nuclear Pop Culture–Panel	Training for New Reactors and Tomorrow's Workforce	Research by U.S. Department of Energy–Sponsored Students --- Focus on Communications—II: Pronuclear Activism–Panel
Magic Kingdom Ballroom 1			Current Issues in Computational Methods–Roundtable	Transport Methods: General	Computational and Mathematical Modeling for Radiation Detection and Measurement—I
Magic Kingdom Ballroom 2			Core Design Development: Current Issues and Their Impacts–Panel	Reactor Analysis Methods	Advancements in Multi-Physics Reactor Simulation
Magic Kingdom Ballroom 3			Environmental Benefits of Sustainable Nuclear Science and Technology	Nonelectrical Applications of Nuclear Power–Panel	Best of DD&R 2007
Magic Kingdom Ballroom 4			Report from the Committee on New Construction–Panel	Advanced Light Water Reactor Design and Construction Advances–Panel	Digital Information and Control for New Plants–Papers/Panel
Grand Ballroom South				Status of Nuclear Energy Programs of Nations–Panel	

ROOM	WEDNESDAY, JUNE 11, 2008		THURSDAY, JUNE 12, 2008	
	8:30 AM – 11:30 AM	1:00 PM – 4:00 PM	8:30 AM – 11:30 AM	1:00 PM – 4:00 PM
Dreams A	General Thermal Hydraulics—In Memory of Professor Gunol Kojasoy	Computational Fluid Dynamics Analysis of Rod Bundles --- Computational Thermal Hydraulics—II	Decommissioning, Decontamination, and Reutilization Technologies–Panel	
Dreams D	Nuclear Methods in Materials Research—I	Nuclear Methods in Materials Research—II	Biology and Medicine: General	Neutron Activation Analysis: Status After Five Decades–Tutorial
Dreams G	The PHEBUS Experiment and Analysis Program—I	The PHEBUS Experiment and Analysis Program—II	Human Reliability and Probabilistic Risk Assessments	Current Issues in Nuclear Facility Safety
Dreams H	ANSI/ANS Standard for Criticality Safety Engineer Training and Qualification–Panel	Advances in Fixed Neutron Absorber Applications --- Data, Analysis, and Operations for Nuclear Criticality Safety—II	Nuclear Criticality Safety Standards–Forum --- Criticality Safety and Nuclear Packaging	Data, Analysis, and Operations for Nuclear Criticality Safety—III
Wonder A	Modeling, Analysis, and Licensing Issues Related to Common-Cause Failure in Digital Instrumentation and Control Systems for Digital Upgrades from Analog Systems	NJOY–Tutorial	Introduction to Monte Carlo–Tutorial	Monte Carlo Burnup/Transmutation–Tutorial
Wonder B	Safety of Spent Nuclear Fuel Transport–Panel	Fuel Cycle Waste Forms and Strategies	Effects of New Fuel Cycles on Low-Level, Transuranic, and High-Level Waste Repositories	Process Monitoring and Event Detection for Enhancing Nuclear Nonproliferation
Wonder D	Innovations in Nuclear Engineering Education	Developments in Nuclear Talent Pipeline and Workforce Planning–Panel	Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—I	Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—II
Magic Kingdom Ballroom 1	Computational Methods: General	Computational and Mathematical Modeling for Radiation Detection and Measurement—II	ENDF/B-VII.0 and JEFF-3.1: Introduction and Validation	
Magic Kingdom Ballroom 2	Reactor Physics: General—I	Reactor Physics Design, Validation, and Operating Experience	Reactor Physics: General—II	
Magic Kingdom Ballroom 3	Current Issues in Environmental Restoration and Decommissioning	RADTRAN: What It Is and What It Does–Tutorial	Uranium Enrichment and Nonproliferation: Challenges in the Nuclear Renaissance–Panel	
Magic Kingdom Ballroom 4	Aging Management Issues—"Life Beyond 60"–Panel	Control Strategies in Next Generation Reactors	Advanced/Gen-IV Reactor Innovations and Advancements—I	Advanced/Gen-IV Reactor Innovations and Advancements—II

MONDAY • JUNE 9, 2008

7:30 AM – 5:00 PM	**MEETING REGISTRATION**
8:00 AM – 10:00 AM	**SPOUSE/GUEST HOSPITALITY**
8:30 AM – 11:30 AM	**2008 ANS ANNUAL MEETING: OPENING PLENARY** "Nuclear Science and Technology: Now Arriving on Main Street"
10:00 AM – 3:00 PM	**SPOUSE/GUEST TOUR** "San Juan Mission Tour and Shopping in Old Town"
11:30 AM – 1:00 PM	**OPERATIONS AND POWER DIVISION LUNCHEON**
1:00 PM – 2:30 PM	**2008 ANS ANNUAL MEETING: ANS PRESIDENT'S SPECIAL SESSION** "Getting the Word Out"
2:30 PM – 4:00 PM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** • Computational Thermal Hydraulics—I • Isotopes and Radiation: General—I • The VERCORS and MASCA Severe Accident Experiment Programs • Data, Analysis, and Operations for Nuclear Criticality Safety—I • Current Topics in Radiation Protection and Shielding–Roundtable • The Potential for International Collaborations on Closed Fuel Cycle Demonstrations and Implementation–Panel • Focus on Communications—I: Nuclear Pop Culture–Panel • Current Issues in Computational Methods–Roundtable • Core Design Development: Current Issues and Their Impacts–Panel • Environmental Benefits of Sustainable Nuclear Science and Technology • Report from the Committee on New Construction–Panel
2:30 PM – 4:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 39)
2:30 PM – 4:00 PM	**NFSM EMBEDDED TOPICAL MEETING: OPENING PLENARY SESSION** (see page 63)
3:00 PM – 5:00 PM	**ISOTOPES EMBEDDED TOPICAL MEETING: OPENING PLENARY SESSION** (see page 59)
4:00 PM – 5:00 PM	**ANS BUSINESS MEETING**
4:00 PM – 6:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #1** (see page 39)
6:45 PM – 10:00 PM	**EVENING EVENT:** "Rat Pack Party–An Evening with the Kings of Cool"

MONDAY, JUNE 9, 2008 • 8:30 A.M.

Opening Plenary: Nuclear Science and Technology: Now Arriving on Main Street. *Chair:* Ross Ridenoure *(Southern California Edison)* [Track 1]

Disney Grand Ballroom
8:30 a.m.

WELCOMING REMARKS:

- Don Hintz *(President, American Nuclear Society)*
- Jim Reilly (*Southern California Edison)*

SPEAKERS:

- The Honorable J. Bennett Johnston *(Johnston & Associates, LLC)*
- Commissioner Peter B. Lyons *(U.S. Nuclear Regulatory Commission)*
- Charles G. Pardee *(Exelon Corporation)*
- Greg Selby *(EPRI)*

PRESENTATION OF SMYTH AWARD:
Marv Fertel *(Nuclear Energy Institute)*

MONDAY, JUNE 9, 2008 • 1:00 P.M.

ANS President's Special Session: Getting the Word Out. *Chair:* Donald C. Hintz *(President, ANS)* [Track 1]

Disney Grand Ballroom
1:00 p.m.

Nuclear Science and Technologies have become the buzz on Main Street, making it crucial that the voice of Society members be part of that buzz. At a town hall-style meeting, ANS President Don Hintz and President-Elect William Burchill will host a dialogue with members about the Society's role in bringing nuclear science to Main Street, including an introduction to newly elected officer/board members and an update on key efforts including the executive director search and utility integration initiatives.

MONDAY, JUNE 9, 2008 • 2:30 P.M.

Computational Thermal Hydraulics—I, sponsored by THD. *Chair:* Brian G. Woods *(Oregon State Univ)* [Track 7]

Dreams A
2:30 p.m.

Thermal Performance of a Fast Neutron Test Concept for the Advanced Test Reactor, Donna Post Guillen *(INL)*

2:50 p.m.

Temperature Distributions in a Pebble with Dispersed Fuel Particles Calculated by Monte Carlo Method, Jae Hoon Song, Nam Zin Cho *(KAIST)*

3:10 p.m.

A Lattice Boltzmann Framework for the Simulation of Boiling Hydrodynamics in BWRs, Prashant K. Jain *(Univ of Illinois)*, Adrian Tentner *(ANL)*, Rizwan-uddin *(Univ of Illinois)*

3:30 p.m.

Numerical Modeling and Analysis of Supercritical Carbon Dioxide Turbine, Tae W. Kim, Wi S. Jeong, Kune Y. Suh *(Seoul Natl Univ)*

3:50 p.m.

Using Statistical Sensitivities for Adaptation in a Thermo-hydraulic Simulation, Xiaojing Liu *(Shanghai Jiao Tong Univ)*, Alexander Kerner *(Inst for Energy Economy and Application Technol)*, Anselm Schaefer *(ISaR Inst for Safety and Reliability)*

Isotopes and Radiation: General—I, sponsored by IRD. *Chair:* Kenan Ünlü *(Penn State)* [Track 6]

Dreams D
2:30 p.m

Tip Length Optimization for a Pyroelectric Crystal Neutron Source, Don Gillich, Yaron Danon, Andrew Kovanen, Bryan Herman, Will Labarre *(RPI)*

2:55 p.m.

Experiments with Relativistic Electrons Producing Tunable X-rays from Cu Crystals, B. Sones *(U.S. Military Acad)*, Y. Danon, E. Blain *(RPI)*

3:20 p.m.

RNAA with Beta Counting at NIST: An Overview, Rick L. Paul *(NIST)*, invited

The VERCORS and MASCA Severe Accident Experiment Programs, sponsored by NISD. *Session Organizer:* Dana A. Powers *(SNL)*. *Cochairs:* Dana A. Powers, Stephen Schultz *(Duke Energy)* [Track 4]

Dreams G
2:30 p.m.
Fission Products Behaviour under Severe PWR Accident Conditions: The VERCORS Experimental Programme, Y. Pontillon, G. Ducros *(CEA)*

3:00 p.m.
Implications of MASCA Findings for In-Vessel Melt Retention, Bal Raj Sehgal *(Royal Inst of Technol)*, H. Tuomisto *(Fortum Nuclear Services Ltd.)*

3:30 p.m.
The French Interpretation of the Results of MASCA Programme and Reactor Applications, B. Tourniaire, J. M. Seiler, K. Froment, F. Defoort *(CEA)*, F. Fichot, M. Barrachin *(IRSN)*, C. Journeau *(CEA)*

Data, Analysis, and Operations for Nuclear Criticality Safety—I, sponsored by NCSD; cosponsored by YMG. *Session Organizer:* Nichole Ellis *(Ellis Nuclear Eng LLC)*. *Chair:* Nichole Ellis [Track 4]

Dreams H
2:30 p.m.
K-25/27 Building Waste Burial at the Environmental Management Waste Management Facility, Roy W. Rathbun, Roger W. Bartholomay *(WSMS)*, Kevin D. Kimball *(NISYS Corp)*

2:55 p.m.
MCNP-PoliMi Calculations of Active Neutron Interrogation Measurements for a HEU Annular Casting, J. J. Henkel, J. T. Mihalczo *(ORNL)*

3:20 p.m.
Neutron (>1 MeV) Room Return Effects on Subcritical HEU Castings, John T. Mihalczo *(ORNL)*

3:55 p.m.
CAAS Detector Placement Analysis at GNF-A Facility, Qi Ao, John F. Zino *(GE-Hitachi Nuclear Energy)*

4:20 p.m.
Assessing Double Contingency during Enforcement Proceedings at NRC Licensees, Dennis C. Morey, Thomas J. Marenchin *(NRC)*

4:55 p.m.
An Electronic Criticality Handbook, Paul Hulse, Dominic Winstanley *(Sellafield Ltd)*

Current Topics in Radiation Protection and Shielding–Roundtable, sponsored by RPSD. *Session Organizer:* Richard Amato *(Bettis)*. *Chair:* Richard Amato [Track 7]

Wonder A
2:30 p.m.
Everyone is invited to give a short presentation on any Radiation Protection and Shielding topic of interest. The first topic will be analytical and experimental benchmarking. What is a good benchmark? What cross sections need testing? Additional ten-minute time slots will be allotted on a first-come/first-serve basis. This is meant to be fast-paced, informal, and fun.

The Potential for International Collaborations on Closed Fuel Cycle Demonstrations and Implementation–Panel, sponsored by FCWMD. *Session Organizers:* James Laidler *(ANL)*, Emory Collins *(ORNL)*. *Chair:* James Laidler [Track 1]

Wonder B
2:30 p.m.
Advanced fuel cycle facilities are planned in several countries for the future. In the interim, existing reactors, spent fuel separations, and fuel fabrication facilities must be used for demonstrations and early implementation of the technologies to be deployed. Some international collaborations are planned, and others may be needed. The existing and potential collaborations will be discussed.

PANELISTS:
- Andy Griffith *(DOE)*
- Bernard Boullis *(CEA)*
- Hideyuki Funasaka *(JAEA)*
- Richard Taylor *(Nexia Solutions)*
- Mikhail Kormilitsyn *(Research Institute for Atomic Reactors)*

Focus on Communications—I: Nuclear Pop Culture–Panel, sponsored by ETD. *Session Organizer:* W. David Pointer *(ANL)*. *Chair:* W. David Pointer [Track 9]

Wonder D
2:30 p.m.
Atomic energy has been a fixture in American pop culture since the middle of the last century. This session will explore the introduction of science and technical information into the creative process, review the current status of nuclear science and technology in the popular culture, and provide a forum for the discussion of the impact of these images on the political and public perception of nuclear science and technology. Of particular interest are efforts to employ these images in communications with the public and efforts to establish new pop culture images associated with these technologies.

PANELISTS:
- Carol Cole *(NorthWinds, Inc.)*
- Arik Martin *(Independent Filmmaker)*
- Guy Phillippi *(Story Analyst for TV and Film)*
- Bryan Wilkes *(National Nuclear Security Administration)*

Current Issues in Computational Methods–Roundtable, sponsored by MCD. *Session Organizer:* Jasmina Vujic *(Univ of California)*. *Chair:* Jasmina Vujic [Track 7]

Magic Kingdom Ballroom 1
2:30 p.m.
PANELISTS:
- Advanced Modeling and Simulations in Nuclear Energy—Future Directions, David Nowak *(ANL)*
- Avenues and Challenges in Computational Nuclear Power Safety, Nam Dinh *(INL)*
- Vision for a Next Generation Fuel Performance Simulation Capability, Glen Hansen *(INL)*

Core Design Development: Current Issues and Their Impacts–Panel, sponsored by RPD; cosponsored by OPD, YMG. *Session Organizer:* Andrew H. Nicholson *(Dominion)*. *Chair:* Andrew H. Nicholson [Track 7]

Magic Kingdom Ballroom 2
2:30 p.m.
With the development of more sophisticated computer models and the use of more diverse fuel products, core designs have become increasingly more complex. In addition, the constraints on the core design have also become more complicated. The normal considerations such as safety analysis limits, cycle energy, and fuel economics still remain, but there are a growing number of other issues that can become equally as important in the core design development. Some issues such as the "zero-by-ten" initiative and minimizing axial offset deviation may be industry wide, while others such as preventing grid-to-rod fretting, tilt mitigation, or accommodating chemistry changes may be specific to only a few or even just one unit. This session will present issues that impact core design development and the steps that are being taken to accommodate them.

PANELISTS:
- Jeffrey R. Secker *(Westinghouse Nuclear Fuel)*
- Daniel B. Kelley *(First Energy Corporation)*
- Andrew H. Nicholson *(Dominion Generation)*

Environmental Benefits of Sustainable Nuclear Science and Technology, sponsored by ESD. *Chair:* Sama Bilbao y León *(IAEA)* [Track 1]

Magic Kingdom Ballroom 3
2:30 p.m.
Looking Down from Hubbert's Peak: Is the World Running Low on Oil?, Charles H. Eccleston *(EPNS)*

2:55 p.m.
Development of Effective and Durable Submicroscopic Radioisotopic Power Generators, E. V. Steinfelds, J. S. Tulenko *(Univ of Florida)*

3:20 p.m.
A Comparative NEPA Analysis of Nuclear Power Plant Impacts Evaluating Relationship Between Short-Term Uses and Long-Term Environmental Productivity, Charles H. Eccleston *(EPNS)*

Report from the Committee on New Construction–Panel, sponsored by OPD. *Cochairs:* Edward (Ted) Quinn *(Consultant)*, Kyle Turner *(McCallum-Turner)* [Track 2]

Magic Kingdom Ballroom 4
2:30 p.m.
This session, sponsored by the Operations and Power Division's Committee for New Construction, will discuss the status of the nuclear renaissance in the United States. Representatives from the plant owners, vendors, and government will talk about the status of the various projects and about the current issues and challenges.

PANELISTS:
- Tom Miller *(DOE)*
- David Matthews *(NRC)*
- Eugene Grecheck *(Dominion)*
- Jose Reyes *(NuScale)*

TUESDAY • JUNE 10, 2008

7:30 AM – 5:00 PM	**MEETING REGISTRATION**
8:00 AM – 10:00 AM	**SPOUSE/GUEST HOSPITALITY**
8:00 AM – 10:00 AM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #2** (see page 41)
8:30 AM – 11:30 AM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** • Thermal Hydraulics Aspects of Nuclear Hydrogen Systems–Panel • Isotopes and Radiation: General—II • The ARTIST Experiment and Analysis Program—I • In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/Paper—I • Computational Resources for Radiation Modeling • Radiation Protection and Shielding: General • Advanced Head-End Improvements for Processing Spent Nuclear Fuels • Recycle of Reusable Components in Spent Nuclear Fuel • Advanced Separation Technologies for Spent Nuclear Fuel or Radioactive Waste Treatment • Training for New Reactors and Tomorrow's Workforce • Transport Methods: General • Reactor Analysis Methods • Nonelectrical Applications of Nuclear Power–Panel • Advanced Light Water Reactor Design and Construction Advances–Panel • Status of Nuclear Energy Programs of Nations–Panel
8:30 AM – 11:30 AM	**ISOTOPES EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 59)
8:30 AM – 11:30 AM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
10:00 AM – 12:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 41)
10:00 AM – 3:00 PM	**SPOUSE/GUEST TOUR** "The J. Paul Getty Museum"
11:30 AM – 1:00 PM	**ANS HONORS AND AWARDS LUNCHEON**
1:00 PM – 4:00 PM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** • Two-Phase Flow Experimentation • Neutron Depth Profiling: Facilities and Applications • The ARTIST Experiment and Analysis Program—II • In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/Paper—II • Detection Technologies for Homeland Security Applications • Highlights of AccApp '07–Panel • Research by U.S. Department of Energy-Sponsored Students • Focus on Communications—II: Pronuclear Activism–Panel • Computational and Mathematical Modeling for Radiation Detection and Measurement—I • Advancements in Multi-Physics Reactor Simulation • Best of DD&R 2007 • Digital Information and Control for New Plants–Papers/Panel
1:00 PM – 4:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 41)
1:00 PM – 4:00 PM	**ISOTOPES EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 59)
1:00 PM – 5:00 PM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
4:00 PM – 6:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #3** (see page 41)

TUESDAY, JUNE 10, 2008 • 8:30 A.M.

Thermal Hydraulics Aspects of Nuclear Hydrogen Systems–Panel, sponsored by THD. *Session Organizers:* Chang Oh *(INL)*, Shripad Revankar *(Purdue Univ)*. *Cochairs:* Chang Oh, Shripad Revankar. All invited. [Track 7]

Dreams A
8:30 a.m.
A next generation nuclear plant (NGNP), very high temperature gas-cooled reactor (VHTR) is being developed to serve as a demonstration of state-of-the-art nuclear technology. The purpose of the demonstration is twofold: (1) efficient low-cost energy generation and (2) hydrogen production. While hydrogen production and advanced energy cycles are still in their early stages of development, research toward hydrogen production using nuclear process heat is under way.

What this particular panel session would focus on would be the thermal hydraulics aspects of system integration, efficiency, advantages and disadvantages of the high temperature steam electrolysis, S-I process, and hybrid sulfur and other process. This panel invites leading researchers in the nuclear hydrogen production field, and the current status of the technology will be discussed. While the focus would be on thermal hydraulics issues, questions on materials, control, and safety will also be discussed since these also limit the hydrogen production.

PANELISTS:
- Coupling High Temperature Electrolysis with a VHTR, J. Stephen Herring *(INL)*
- Integration of the Hybrid Sulfur Cycle with a Pebble Bed Modular Reactor, Max B. Gorensek *(SRNL)*, Renee Greyvenstein *(PBMR)*
- Complex Heat Transfer Networks for Nuclear Hydrogen Systems, Steven Sherman *(SRNL)*
- Status of the Japanese HTGR and Nuclear Hydrogen Program, Shusaku Shiozawa *(JAEA)*
- Thermal Hydraulic R&D on Nuclear Hydrogen System in Korea, Won J. Lee *(KAERI)*
- Programmatic Criteria for Evaluating Nuclear Hydrogen Production Technologies, Carl Sink *(DOE)*

Isotopes and Radiation: General—II, sponsored by IRD. *Chair:* Kenan Ünlü *(Penn State)* [Track 6]

Dreams D
8:30 a.m.
Plutonium Isotopic Analysis of Microcalorimeter Gamma-ray Spectra, D. Vo, M. Bacrania, A. Hoover, P. Karpius, M. Rabin, C. Rudy *(LANL)*, J. Beall, W. Doriese, R. Horansky, K. Irwin, C. Reintsema, E. Sassi, J. Ullom, L. Vale *(NIST)*

8:55 a.m.
Spectrum Deconvolution Analysis Tool (SDAT), S. R. Biegalski, K. M. Foltz Biegalski, D. Haas *(Univ of Texas, Austin)*

9:20 a.m.
X-Ray Production Using Stacked Pyroelectric Crystals, Andrew Kovanen, Yaron Danon, Don Gillich *(RPI)*

9:45 a.m.
PGAA for Certification of Boron and Other Elements in Zircaloy, Rick L. Paul *(NIST)*, invited

10:10 a.m.
Assessing Plutonium Electrodeposition Yield Dependence on pH, Jung Rim *(Penn State)*, Stephen LaMont, Donald Dry *(LANL)*, Kenan Ünlü *(Penn State)*

The ARTIST Experiment and Analysis Program—I, sponsored by NISD. *Session Organizer:* Dana A. Powers *(SNL)*. *Cochairs:* Salih Güntay *(Paul Scherrer Institut)*, Dana A. Powers [Track 4]

Dreams G
8:30 a.m.
Introduction to the ARTIST Program, S. Güntay, A. Dehbi, D. Suckow *(Paul Scherrer Institut)*

9:00 a.m.
The Characteristics of Aerosols Formed During a Severe Accident of a Water-cooled Nuclear Reactor, M. P. Kissane *(Institut de Radioprotection et de Sûreté Nucléaire)*

9:30 a.m.
Fission Product Release Boundary Conditions for SGTR-Initiated Severe Accident, Yehong Liao, Salih Guentay *(Paul Scherrer Institut)*

10:00 a.m.
Numerical Modeling of Flow in Dry Secondary Side of Steam Generator, T. Berg, J. Bredberg *(Epsilon HighTech AB)*, A. Dehbi *(Paul Scherrer Institut)*

10:30 a.m.
Particle Retention in ARTIST Dry Bundle Tests, Terttaliisa Lind, Detlef Suckow, Salih Güntay *(Paul Scherrer Institut)*

11:00 a.m.
Results from the ARTIST Flooded Bundle Tests, A. Dehbi, D. Suckow, S. Güntay *(Paul Scherrer Institut)*

In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/Paper—I, sponsored by NCSD. *Session Organizer:* Calvin M. Hopper *(ORNL)*. *Chair:* Calvin M. Hopper [Track 4]

Dreams H
8:30 a.m.
PAPER
Tutorial on In-Situ Nondestructive Assay Measurements for Nuclear Criticality Safety Specialists, Steven E. Smith, Alexander Solodov, James S. Bogard, Hubert Y. Rollen, Angela L. Thornton *(ORNL)*

SPEAKERS:
- Steve Smith *(ORNL)*
- Hubert Rollen *(ORNL)*
- Alan Krichinsky *(ORNL)*

Computational Resources for Radiation Modeling, sponsored by RPSD. *Session Organizer:* Charlotta Sanders *(BSC)*. *Chair:* Arzu Alpan *(Westinghouse)* [Track 7]

Wonder A
8:30 a.m.
The Use of MCNP5 for Simulation of a Pulse Fast Thermal Neutron Analysis System, Alexander Barzilov, Ivan Novikov, Qianmei Zhang *(Western Kentucky Univ)*

8:55 a.m.
Preliminary Results for VOXMAT: Phantom Model with Combination of Voxel and Mathematical Geometry, Hatice Akkurt *(ORNL)*, Kursat B. Bekar *(Penn State)*, Keith F. Eckerman *(ORNL)*

9:20 a.m.
MCNP/X Merger, John S. Hendricks, H. Grady Hughes, Gregg W. McKinney, Richard E. Prael, John T. Goorley *(LANL)*

Radiation Protection and Shielding: General, sponsored by RPSD. *Session Organizer:* Charlotta Sanders *(BSC)*. *Chair:* Arzu Alpan *(Westinghouse)* [Track 7]

Wonder A
9:50 a.m.
Comparison of Flux-to-Dose Rate Conversion Factors Used in Shielding Analysis on the Yucca Mountain Project, Dorin P. Musat, Charlotta E. Sanders *(Bechtel SAIC)*

10:15 a.m.
Delayed Gammas and Reactor Internals Degradation Analyses, Justin N. Byard *(AREVA NP Inc.)*

10:40 a.m.
KIPT Accelerator Driven Subcritical Facility Shield Design, Zhaopeng Zhong, Yousry Gohar *(ANL)*

11:05 a.m.
Dose Control in an Active Interrogation System, Michael P. Shannon, Nolan E. Hertel *(Georgia Tech)*, Daren Norman, Woo Yoon, Brion Bennett, Warren Jones, James Jones *(INL)*

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

Advanced Head-End Improvements for Processing Spent Nuclear Fuels, sponsored by FCWMD. *Session Organizers:* G. D. Del Cul *(ORNL)*, Brian Westphal *(INL)*. *Chair:* Elisabeth Walker *(ORNL)* [Track 3]

Wonder B
8:30 a.m.
Design, Fabrication, and Testing of a Laboratory-Scale Voloxidation System for Removal of Tritium and Other Volatile Fission Products from Used Nuclear Fuel, B. B. Spencer, G. D. Del Cul, E. C. Bradley, R. T. Jubin, T. D. Hylton, E. D. Collins *(ORNL)*

8:50 a.m.
Evaluation of Decladding Efficiency Using High Burn-up Spent Nuclear Fuels, Geun Il Park, Kwang Hun Cho, Jung Won Lee, Jang Jin Park, Kee Chan Song *(KAERI)*

9:10 a.m.
Initial Testing of an Integrated Pyrochemical Head-End and Volatile Trapping Process, Guillermo D. Del Cul, Barry B. Spencer, Robert T. Jubin, Charles A. Baldwin, Dan W. Ramey, Tom D. Hylton, Emory D. Collins *(ORNL)*

9:30 a.m.
Volatile Gas Capture Systems for the Voloxidation and Dissolver Off-Gas Streams in the Coupled End-to-End (CETE) Demonstration, R. T. Jubin, B. B. Spencer, G. D. Del Cul, B. D. Patton, D. W. Ramey *(ORNL)*

Recycle of Reusable Components in Spent Nuclear Fuel, sponsored by FCWMD. *Session Organizer:* G. D. Del Cul *(ORNL)*. *Chair:* Elisabeth Walker *(ORNL)* [Track 3]

Wonder B
9:55 a.m.
Feasibility Study on the Reuse of Recovered Uranium from a Pyroprocess into CANDU Reactors, Chang Je Park, Kweon Ho Kang, Ho Jin Ryu, Sang Ho Na, Geun Il Park, Kee Chan Song *(KAERI)*

10:15 a.m.
Characterization of Mixed Oxide Powder and Pellets from Modified Direct Denitration, E. A. Walker, R. J. Vedder, G. L. Bell *(ORNL)*

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

Advanced Separation Technologies for Spent Nuclear Fuel or Radioactive Waste Treatment, sponsored by FCWMD. *Session Organizer:* Terry Todd *(INL)*. *Chair:* Terry Todd [Track 3]

Wonder B
10:40 a.m.
Centrifugal Contactor Design and Testing to Support Aqueous Separation of Spent Nuclear Fuel, Jack Law, David Meikrantz, Troy Garn, Nick Mann *(INL)*

11:00 a.m.
Modeling the UREX+3a Process Using Aspen Plus Coupled with AMUSE, F. G. Smith, III, R. A. Dimenna *(SRNL)*

11:20 a.m.
Results and Implications from the First UREX+ Campaign with Coupled End-to-End (CETE) Process Steps, E. D. Collins, L. K. Felker, D. E. Benker, P. D. Bailey, G. D. Del Cul, B. B. Spencer, R. T. Jubin *(ORNL)*

NOTE: This session will immediately follow the preceding session, which will begin at 9:55 a.m.

Training for New Reactors and Tomorrow's Workforce, sponsored by ETD; cosponsored by OPD. *Session Organizer:* Kent Hamlin *(INPO)*. *Chair:* Kent Hamlin [Track 9]

Wonder D
8:30 a.m.
Initial Accreditation of Training for New Reactors, Michael Marler *(STPNOC)*, Michael Llewellyn *(INPO)*

8:55 a.m.
ESBWR Operator Training Program—Standardization and Collaboration, Julia Longfellow *(GE-Hitachi Nuclear Energy)*

9:20 a.m.
Developing the Texas Nuclear Workforce of the Future, Michael Marler, Clarence Fenner *(STPNOC)*

9:55 a.m.
A Model Governmental and Academic Partnership with Nuclear Industry in Support of the Nuclear Technology Workforce Development, William H. Miller *(Univ of Missouri, Columbia)*, Randy L. Etter *(Advanced Technology Center/ Linn State Technical College)*, Gayla M. Neumeyer *(Univ of Missouri, Columbia)*

10:20 a.m.
A Professional Development Program for Graduating Engineers at the Defense Nuclear Facilities Safety Board, Herbert W. Massie, Jr. *(DNFSB)*

Transport Methods: General, sponsored by MCD; cosponsored by RPD. *Session Organizer:* Dmitriy Anistratov *(NCSU)*. *Chair:* Todd Urbatsch *(LANL)* [Track 7]

Magic Kingdom Ballroom 1
8:30 a.m.
Lower Order Approximation of a Transport Equation with Rotationally Nonsymmetric Scattering, Anil K. Prinja *(Univ of New Mexico)*

8:50 a.m.
Improvements to Implicit Monte Carlo Diffusion: Frequency-Dependence and the Difference Formulation, Mathew Cleveland *(Oregon State Univ)*, Nick Gentile *(LLNL)*, Todd S. Palmer *(Oregon State Univ)*

9:10 a.m.
A Robust, Modified Implicit Monte Carlo Method for Thermal Radiative Transfer, Ryan G. McClarren *(LANL)*

9:30 a.m.
Asymptotic Diffusion Analysis of Conservative Methods of Long and Short Characteristics for 1D Spherical Geometry, Dmitriy Y. Anistratov, John T. Fleming *(NCSU)*

9:50 a.m.
An Analysis of the 1-D Spherical Geometry Method of Tubes in the Thick Diffusive Limit, Michael E. Rising, Todd S. Palmer *(Oregon State Univ)*

10:10 a.m.
On-The-Fly Judgments of Monte Carlo Fission Source Convergence, Taro Ueki *(Univ of New Mexico)*

10:30 a.m.
Higher Eigenmode Analysis with Coarse Mesh Projection in Monte Carlo Fission Source Iterations, Brian R. Nease, Taro Ueki *(Univ of New Mexico)*

10:50 a.m.
One-group MCNP5 Criticality Calculations with Anisotropic Scattering, Forrest Brown *(LANL)*, Nathan Barnett *(Oregon State Univ)*

11:10 a.m.
Parallel Performance of a Hybrid Discrete Ordinate and Characteristics Algorithm, Ce Yi, Alireza Haghighat, Glenn Sjoden *(Univ of Florida)*

Reactor Analysis Methods, sponsored by RPD; cosponsored by MCD. *Session Organizer:* Bojan Petrovic *(Georgia Tech)*. *Chair:* Fausto Franceschini *(Westinghouse)* [Track 7]

Magic Kingdom Ballroom 2
8:30 a.m.
Toward More Efficient Uncertainty Quantification, Part I: Theory, Jason Elkins, Hany Abdel-Khalik *(NCSU)*

9:00 a.m.
Investigation of Axial Flux Shape Convergence in Monte Carlo PWR Simulations, Bojan Petrovic *(Georgia Tech)*

9:30 a.m.
Multi-Zone Based Fuel Burnup Analysis of a PWR Assembly Using PENBURN, Thomas Plower, Kevin Manalo, Mireille Rowe, Travis Mock, Glenn Sjoden *(Univ of Florida)*

10:00 a.m.
Time Dependent Non-Extinction Probability for Fast Burst Reactors, Michael W. Gregson *(SNL)*, Anil K. Prinja *(Univ of New Mexico)*

10:30 a.m.
Toward More Efficient Uncertainty Quantification, Part II: Numerical Results, Jason Elkins, Hany Abdel-Khalik *(NCSU)*

11:00 a.m.
Two-Temperature Homogenized Model for Thermal Analysis of a Pebble with Distributed Fuel Particles, Nam Zin Cho, Hui Yu *(KAIST)*

Nonelectrical Applications of Nuclear Power–Panel, sponsored by ESD. *Session Organizer:* Ron Faibish *(ANL)*. *Chair:* Ron Faibish [Track 5]

Magic Kingdom Ballroom 3
8:30 a.m.
The intensifying interest in using nuclear power and energy for producing other products besides electricity has been observed in recent years. This interest is especially apparent when experts consider future and emerging applications of small- and medium-sized reactors (SMRs). The session includes presentations by leading scientists and engineers in the area of nonelectrical applications of nuclear power. These applications include (but are not limited to) nuclear power for the production of potable water by seawater desalination (water-energy cogeneration), hydrogen production, district heating, and biofuels production. The panel includes research and development leaders from industry, academia, national laboratories, and international organizations.

PANELISTS:
- Charles W. Forsberg *(MIT)*
- Renee Greyvenstein *(PBMR, Ltd.)*
- Atam Rao *(IAEA)*
- Finis Southworth *(AREVA)*
- Bilge Yildiz *(MIT)*

Advanced Light Water Reactor Design and Construction Advances–Panel, sponsored by OPD. *Chair:* James M. O'Connell *(Shaw Nuclear)* [Track 2]

Magic Kingdom Ballroom 4
8:30 a.m.
The review of risks for new reactor deployment in the United States has revealed significant shortfalls in everything from heavy cranes to ultralarge forgings as well as the often-mentioned labor shortages of skilled personnel. This session will explore what can be done in the standardization of the new nuclear units and the use of advance construction techniques to do it with fewer personnel from design through commissioning. How can standardization support OEM goals while permitting the reactor and balance of plant designers to achieve optimal system and overall plant performance? Speakers will include key U.S. and international personnel from today's advanced light water reactor supply, construction, and equipment suppliers.

PANELISTS:
- James M. O'Connell, Panel Lead *(Shaw Nuclear)*
- Bill Fox *(AREVA)*
- Jim Winters *(Westinghouse)*
- Jack Tuohy *(Hitachi)*
- Larry Fennern *(GE-Hitachi Nuclear Energy)*
- Keith Paulson *(MHI)*

Status of Nuclear Energy Programs of Nations–Panel, sponsored by INSC. *Cochairs:* Andrew C. Kadak *(MIT)*, Gustavo Alonso *(ININ)* [Track 1]

Grand Ballroom South
8:30 a.m.
An update on the long-term nuclear energy programs of selected nations around the world is the purpose of this special panel session organized by the International Nuclear Societies Council (INSC). Experts from China, Japan, Latin America, South Africa, France, the Republic of Korea, and other countries will share their information on new plans for the next 5 to 20 years, including identification of the reactor types that are anticipated. This session will achieve clarification of the prospects for worldwide future growth of nuclear power.

PANELISTS:
- Gustavo Alonso *(ININ)*
- Kan Wang *(Tsinghua Univ)*
- Gert Claassen *(PBMR)*
- Jean Claude Gauthier *(AREVA NP)*
- Nam Zin Cho *(KAIST)*
- Representative from Japan to be determined
- Representative from Russia to be determined

TUESDAY, JUNE 10, 2008 • 1:00 P.M.

Two-Phase Flow Experimentation, sponsored by THD. *Session Organizers:* Xiaodong Sun *(Ohio State)*, Yassin Hassan *(Texas A&M)*. *Cochairs:* Xiaodong Sun, Yassin Hassan [Track 7]

Dreams A
1:00 p.m.
A Wave-Centric View of Annular Two-Phase Flow, DuWayne Schubring, Timothy A. Shedd *(Univ of Wisconsin-Madison)*

1:20 p.m.
Effect of Non-Condensable Gases on Triggering and Energetics of a Single Drop Vapor Explosion, Roberta Concilio Hansson, Truc-Nam Dinh *(Royal Inst of Technol)*

1:40 p.m.
Bubble Oscillatory Dynamics in Sub-Cooled Boiling Medium from Large Cavities, Hitesh Bindra, Barclay G. Jones *(Univ of Illinois)*

2:00 p.m.
Determination of Drag Coefficient and Rise Velocity of Ellipsoidal and Distorted Drops, S. Vasavada *(Purdue Univ)*, X. Sun *(Ohio State)*, M. Ishii *(Purdue Univ)*, W. Duval *(NASA Glenn Research Center)*

2:20 p.m.
Experimental Studies on Transversal Heat Transport in 7-Rod Bundles, X. Cheng, Y. Q. Yu *(Shanghai Jiao Tong Univ)*

2:40 p.m.
Experimental Investigation of Condensation Phenomena inside a U-tube Steam Generator, Brian Collins *(PNNL)*, Brian G. Woods, John Groome *(Oregon State Univ)*

3:00 p.m.
PTV Measurements of Local Two-Phase Flow Parameters in Upward Subcooled Flow Boiling Through a Rectangular Channel, C. E. Estrada-Perez, H. S. Ahn, E. E. Dominguez-Ontiveros, Y. A. Hassan *(Texas A&M)*

3:20 p.m.
Multiscale Flow Structure Measurements in a Pebble Bed Like Reactor, E. E. Dominguez-Ontiveros, C. E. Estrada-Perez, Y. A. Hassan *(Texas A&M)*

Neutron Depth Profiling: Facilities and Applications, sponsored by IRD; cosponsored by BMD. *Session Organizer:* R. Gregory Downing *(NIST)*. *Chair:* R. Gregory Downing [Track 6]

Dreams D
1:00 p.m.
Modifications to the UT-NDP System, Scott M. Whitney, Steve Biegalski, Sean O'Kelly *(Univ of Texas, Austin)*, invited

1:25 p.m.
Development of a Novel Ion Time-of-Flight Spectrometer for Neutron Depth Profiling, Sacit M. Cetiner *(Penn State)*, Rudolph Tromp, Michael S. Gordon *(IBM T. J. Watson Research Center)*, Kenan Ünlü, Jack S. Brenizer *(Penn State)*

1:50 p.m.
High Dose of Helium Implanted in Nano-Cavity Tungsten to Evaluate Threshold of Surface Blistering due to He Bubble Formation, N. Parikh, R. Parker *(Univ of North Carolina, Chapel Hill)*, R. Downing, L. Cao *(NIST)*, invited

2:15 p.m.
Neutron Depth Profiling of Cathode Materials from Lithium Ion Cells, Scott M. Whitney, Yunhui Huang, Steve Biegalski *(Univ of Texas at Austin)*, invited

2:40 p.m.
Cross Electric and Magnetic Field (CEM) Field Spectrometer for Neutron Depth Profiling, Sacit M. Cetiner, Kenan Ünlü *(Penn State)*, Lei (Raymond) Cao, R. Gregory Downing *(NIST)*

3:05 p.m.
Diffusion of Boron in CaF_2, Jiri Vacik, Vladimir Hnatowicz *(Nuclear Physics Inst AS CR)*, Ulli Köster *(Inst of Laue-Langevin)*, invited

3:30 p.m.
The Analysis of Gamma Irradiated Boron-doped Diamond Films by CNDP Using Computerized Data Reduction, Lei R. Cao *(NIST/Univ of Maryland)*, Sanju Gupta *(Univ of Missouri, Columbia)*, R. Gregory Downing *(NIST)*

The ARTIST Experiment and Analysis Program—II, sponsored by NISD. *Session Organizer:* Dana A. Powers *(SNL)*. *Cochairs:* Luis E. Herranz *(CIEMAT)*, Dana A. Powers [Track 4]

Dreams G
1:00 p.m.
CFD Simulation of ARTIST Break Stage and Comparisons with Measured Data, T. Berg, J. Bredberg *(Epsilon HighTech AB)*, D. Suckow *(PSI)*

1:30 p.m.
Aerodynamics of a Particle-laden Gas Jet in the Break Stage of a Steam Generator during Severe SGTR Sequences, Luis E. Herranz, C. López del Prá, F. J. Sánchez-Velasco *(CIEMAT)*

2:00 p.m.
Droplet Retention and Velocity Field in a Steam Generator, Ralf Kapulla, Steffen Danner, Salih Güntay *(Paul Scherrer Institut)*

2:30 p.m.
Experiments on Fine Particle Resuspension in Internal Tube Flow, Ari Auvinen, Tapani Raunio *(VTT Technical Research Centre of Finland)*, Jorma Jokiniemi *(VTT Technical Research Centre of Finland/Univ of Kuopio)*, Johannes Roine *(VTT Technical Research Centre of Finland)*

3:00 p.m.
Fluent Simulation of Separator and Dryer Aerodynamics and Comparison with Data, Masao Ogino *[Japan Nuclear Energy Safety Organization (JNES)]*, Ralf Kapulla, Abdel Dehbi *(Paul Scherrer Institut)*

3:30 p.m.
A Probabilistic Model Using ARTIST Data for Analysis of SGTR Fission Product Release Fraction, Y. Liao, S. Guentay, A. Dehbi *(Paul Scherrer Institut)*

In Situ Nondestructive Analysis for Nuclear Criticality Safety–Tutorial/Paper—II, sponsored by NCSD. *Session Organizer:* Calvin M. Hopper *(ORNL)*. *Chair:* Calvin M. Hopper [Track 4]

Dreams H
1:00 p.m.
PAPER
Tutorial on In-Situ Nondestructive Assay Measurements for Nuclear Criticality Safety Specialists, Steven E. Smith, Alexander Solodov, James S. Bogard, Hubert Y. Rollen, Angela L. Thornton *(ORNL)*

SPEAKERS:
- Steve Smith *(ORNL)*
- Hubert Rollen *(ORNL)*
- Alan Krichinsky *(ORNL)*

Detection Technologies for Homeland Security Applications, sponsored by RPSD; cosponsored by IRD. *Session Organizer:* Raymond Klann *(ANL)*. *Chair:* Eric Shores *(LANL)* [Track 10]

Wonder A
1:00 p.m.
Simulated Antineutrino Detector Response for Diversion Scenarios in LEU and MOX Reactors, A. Misner, T. Palmer *(Oregon State Univ)*, A. Bernstein *(LLNL)*

1:25 p.m.
Assaying Internal Contamination due to Inhalation Using Various Handheld Detectors—An Overview, S. Scarboro, N. Hertel, R. Manger, C. LoBracco, S. Dewji, E. Burgett, M. Bellamy, M. Shannon *(Georgia Tech)*

1:50 p.m.
Using a Borated Panel to Form a Dual Neutron-Gamma Detector, Scott Wilde, Raymond P. Keegan *(National Security Technologies)*, Leo Van Ausdeln *(INL)*

Highlights of AccApp '07–Panel, sponsored by AAD. *Session Organizer:* Philip Ferguson *(ORNL)*. *Chair:* Denis Beller *(UNLV)* [Track 8]

Wonder B
1:00 p.m.
The Accelerator Applications Division and the Idaho Section of the ANS organized a record-setting Eighth International Topical Meeting on Nuclear Applications and Utilization of Accelerator Technology in 2007. The conference was held jointly with the IAEA, including their symposium on utilization of accelerators, and also included the Fifth Annual Workshop on Accelerator-Driven Subcritical Systems Experiments. With an attendance of more that 220 scientists, engineers, and students, the conference far exceeded all expectations. This AAD sponsored session will include a discussion of highlights of AccApp'07 along with invited presentations selected from the conference covering several aspects of nuclear applications of accelerators.

PANELISTS:
- Denis Beller *(UNLV)*
- Eric Pitcher *(LANL)*
- Phil Ferguson *(ORNL)*
- Sean O'Kelly *(Univ of Texas)*
- George Imel *(Idaho State Univ)*

Research by U.S. Department of Energy–Sponsored Students, sponsored by ETD; cosponsored by YMG. *Session Organizer:* Peter F. Caracappa *(RPI)*. *Chair:* Peter F. Caracappa [Track 9]

Wonder D
1:00 p.m.
MCNP5 Voxelized Dose Model for BNCT Applied to Breast Cancers, Manuel Sztejnberg Gonçalves-Carralves, Tatjana Jevremovic *(Purdue Univ)*

1:25 p.m.
Neural Network & Point Kinetics Algorithm for Virtual PUR-1 Research Reactor, Kevin Mueller, Tatjana Jevremovic *(Purdue Univ)*

1:50 p.m.
Full Hexagonal Core Modeling with the Agent Code, Xue Yang, Tatjana Jevremovic *(Purdue Univ)*

2:15 p.m.
Development of Molecular Dynamics Models for Simulating Uranium Mononitride Fuel, S. Zhang, A. I. Hawari *(NCSU)*

Focus on Communications—II: Pronuclear Activism–Panel, sponsored by ETD; cosponsored by YMG. *Session Organizer:* W. David Pointer *(ANL)*. *Chair:* W. David Pointer [Track 9]

Wonder D
2:45 p.m.
The electric power industry is beginning to consider the construction and operation of a new generation of nuclear power plants to ensure continuity of power supplies and provide for the nation's growing energy needs, and the public debate over the safety and viability of nuclear energy is rapidly returning to a position of high visibility to the public. In most cases the arguments being leveled against new nuclear generation capacity have not significantly changed since the peak of U.S. construction several decades ago. However, the supporters of nuclear power are taking a more active role, expanding the focus of their efforts beyond the scientific education of future generations to include communication with all affected individuals. This session will highlight current activities of pronuclear activists throughout the nation and the industry.

PANELISTS:
- Candace Davison *(Penn State)*
- Lisa Stiles *(Dominion Generation)*
- Chuck Vincent *(ANS)*
- Sama Bilbao y León *(IAEA)*
- James Conca *(Carlsbad Environmental Monitoring and Research Center)*

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

Computational and Mathematical Modeling for Radiation Detection and Measurement—I, sponsored by MCD. *Session Organizers:* Todd Palmer *(OSU)*, Robin Gardner *(NCSU)*. *Chair:* Todd Palmer [Track 7]

Magic Kingdom Ballroom 1
1:00 p.m.
Rapid Computation of Gamma-ray Spectra for One-Dimensional Source Models, Dean J. Mitchell, John Mattingly *(SNL)*, invited

1:25 p.m.
A Particle-Balance Approach to the Calculation of Pulse Height Distributions, Blake Kelley, Todd S. Palmer *(Oregon State Univ)*

1:50 p.m.
Calculation of Photon Pulse Height Distributions from Deterministic Transport Simulations, Jacob Benz, Todd Palmer *(Oregon State Univ)*

2:15 p.m.
Synthesis of the Feynman-Y Neutron Multiplicity Metric using Deterministic Transport, John Mattingly, Eric S. Varley *(SNL)*, invited

2:40 p.m.
Rapid Feynman-Y Synthesis: Kynea3 Cross-Section Library Development, Eric S. Varley, John Mattingly *(SNL)*

3:05 p.m.
Coupled Deterministic-Monte Carlo Transport for Radiation Portal Modeling, L. Eric Smith, Erin A. Miller, Richard S. Wittman, Mark W. Shaver *(PNNL)*

Advancements in Multi-Physics Reactor Simulation, sponsored by RPD; cosponsored by MCD. *Session Organizers:* Kevin Clarno *(ORNL)*, Hany Abdel-Khalik *(NCSU)*. *Cochairs:* Kevin Clarno, Hany Abdel-Khalik [Track 7]

Magic Kingdom Ballroom 2
1:00 p.m.
High-Order Spatio-Temporal Coupling of Radiation-Diffusion and Heat Conduction Using Jacobian-Free Newton Krylov Discontinuous Galerkin Method, HyeongKae Park, Robert Nourgaliev, Vincent Mousseau, Richard Martineau, Dana Knoll *(INL)*, Cassiano de Oliveira *(Univ of New Mexico)*, invited

1:30 p.m.
Implicit Time-Integration Method for Simultaneous Solution of a Coupled Nonlinear System, J. Watson, J. Mahaffy, K. Ivanov *(Penn State)*

2:00 p.m.
Spatial Coupling for BWR Stability Analysis, Tomasz Kozlowski, Joanna Peltonen *(Royal Inst of Technol)*, Truc-Nam Dinh *(Univ of California, Santa Barbara)*

2:30 p.m.
Coupled Neutronics and Thermal-Hydraulics Simulations Using MCNP and FLUENT, Jianwei Hu, Rizwan-uddin *(Univ of Illinois)*

3:00 p.m.
A Multi-Physics Coupling Approach for Integrated Nuclear Reactor Safety Calculations, Russell Hooper, William Spotz, Alfred Lorber, Rodney Schmidt *(SNL)*

Best of DD&R 2007, sponsored by ESD; cosponsored by DDRD. *Session Organizer:* James Byrne *(Byrne & Assoc)*. *Cochairs:* James Byrne, Pete Fledderman *(SRS)*. All invited. [Track 5]

Magic Kingdom Ballroom 3
1:00 p.m.
Segmentation and Removal of the Carolinas-Virginia Tube Reactor (CVTR) Moderator Tank, Michael G. Anderson *(MOTA Corporation)*

1:25 p.m.
Radiological Controls for Demolition of a Highly Contaminated Alpha Facility, S. Snyder, A. Hopkins, M. Gerber, B. Klos, M. Minette, E. Lloyd *(Fluor Hanford)*

1:50 p.m.
Hanford As Low As Reasonably Achievable (ALARA) Center is a D&D Resource, Larry Waggoner *(Fluor Hanford)*

2:15 p.m.
Nuclear Rocket Facility Decommissioning Project: Controlled Explosive Demolition of Neutron-Activated Shield Wall, Jerel Nelson *(Polestar Applied Technology, Inc.)*, Mike Kruzic *(National Security Technologies, LLC)*, Rodney Simonsen *(Excelon Corporation)*

2:40 p.m.
Lessons Learned from Radioactive Waste Storage and Disposal Facilities, David W. Esh, Anna H. Bradford *(NRC)*

3:05 p.m.
Radiochemistry Lab Decommissioning and Dismantlement AECL, Chalk River Labs, Ont., Canada, Stephen Kenny *(AECL)*

Digital Information and Control for New Plants–Papers/Panel, sponsored by OPD; cosponsored by HFD. *Chair:* Edward (Ted) Quinn *(Consultant)* [Track 2]

Magic Kingdom Ballroom 4
PAPERS
1:00 p.m.
Soft-Sensing and Monitoring for Feedwater Flow Rate, Heon Young Yang, Man Gyun Na *(Chosun Univ)*

1:25 p.m.
Application of the FIMS in the Korea Nuclear Power Plants, Byung-Soo Cho, Hwan-Yong Chung, Choong-Yeol Yang *(KOPEC)*

1:50 p.m.
An Experimental Investigation on the Relationship between Effectiveness in Information Searching and Situation Awareness during Complex Diagnostic Tasks in NPPs, Jun-Su Ha, Poong-Hyun Seong *(KAIST)*

PANEL DISCUSSION
2:15 p.m.
PANELISTS:
- Richard Miller *(GE-Hitachi Nuclear Energy)*
- William Kemper *(NRC)*

WEDNESDAY • JUNE 11, 2008

7:30 AM – 5:00 PM	**MEETING REGISTRATION**
8:00 AM – 10:00 AM	**SPOUSE/GUEST HOSPITALITY**
8:00 AM – 10:00 AM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #4** (see page 48)
8:30 AM – 11:30 AM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** • General Thermal Hydraulics—In Memory of Professor Gunol Kojasoy • Nuclear Methods in Materials Research—I • The PHEBUS Experiment and Analysis Program—I • ANSI/ANS Standard for Criticality Safety Engineer Training and Qualification–Panel • Modeling, Analysis, and Licensing Issues Related to Common-Cause Failure in Digital Instrumentation and Control Systems for Digital Upgrades from Analog Systems • Safety of Spent Nuclear Fuel Transport-Panel • Innovations in Nuclear Engineering Education • Computational Methods: General • Reactor Physics: General—I • Current Issues in Environmental Restoration and Decommissioning • Aging Management Issues—"Life Beyond 60"–Panel
8:30 AM – 11:30 AM	**ISOTOPES EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 59)
8:30 AM – 11:30 AM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
10:00 AM – 12:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 48)
1:00 PM – 4:00 PM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** • Computational Fluid Dynamics Analysis of Rod Bundles • Computational Thermal Hydraulics—II • Nuclear Methods in Materials Research—II • The PHEBUS Experiment and Analysis Program—II • Advances in Fixed Neutron Absorber Applications • Data, Analysis, and Operations for Nuclear Criticality Safety—II • NJOY–Tutorial • Fuel Cycle Waste Forms and Strategies • Developments in Nuclear Talent Pipeline and Workforce Planning–Panel • Computational and Mathematical Modeling for Radiation Detection and Measurement–II • Reactor Physics Design, Validation, and Operating Experience • RADTRAN: What It Is and What It Does–Tutorial • Control Strategies in Next Generation Reactors
1:00 PM – 4:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 48)
1:00 PM – 4:00 PM	**ISOTOPES EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 59)
1:00 PM – 4:00 PM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
4:00 PM – 6:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #5** (see page 48)
4:00 PM – 6:00 PM	**ANS PUBLIC COMMUNICATIONS WORKSHOP**
6:30 PM – 10:30 PM	**EVENING EVENT:** "An Evening at the Bowers Museum of Cultural Art"
7:00 PM – 9:00 PM	**NFSM EMBEDDED TOPICAL MEETING: POSTER SESSION** (see page 63)

WEDNESDAY, JUNE 11, 2008 • 8:30 A.M.

General Thermal Hydraulics—In Memory of Professor Gunol Kojasoy,

sponsored by THD. *Cochairs:* Karen Vierow *(Texas A&M)*, Seungjin Kim *(Penn State)* [Track 7]

Dreams A

8:30 a.m.
Thermal Analysis of AFIP-2 Experiment in the Advanced Test Reactor, Grant L. Hawkes, Debra J. Utterbeck *(INL)*, Richard G. Ambrosek *(private consultant)*

8:50 a.m.
On Solidification Mechanism that Governs the Effect of Binary Melt Composition on Steam Explosion Energetics, Truc-Nam Dinh, Roberta Concilio Hansson, Pavel Kudinov *[Royal Inst of Technol (KTH)]*

9:10 a.m.
Application of the Phase-change Effective Convectivity Model to Analysis of Core Melt Pool Formation and Heat Transfer in a BWR Lower Head, Chi Thanh Tran, Truc Nam Dinh *[Royal Inst of Technol (RIT)]*

9:30 a.m.
Validation of LAPUR 6 for Stability Prediction: Application to Cofrentes NPP, J. Melara *(Iberdrola Ingeniería y Construcción)*, A. Escriva, J. L. Muñoz-Cobo, M. E. Montesinos *(Polytechnic Univ of Valencia)*, J. A. March-Leuba *(ORNL)*, M. Albendea *(Iberdrola Generación)*

9:50 a.m.
Numerical Vorticity Distribution within Rod Bundles with Inlet Jet Impingement, N. Salpeter, Y. A. Hassan *(Texas A&M)*

10:10 a.m.
High Speed Flow Visualization of Spray Suppression Containment Safety Systems, D. Huitink, C. Ortiz, Y. A. Hassan *(Texas A&M)*

10:30 a.m.
Development and Testing of Printed Circuit Heat Exchanger for Generation IV Reactors, Sai K. Mylavarapu, Justin Figley, Xiaodong Sun, Richard N. Christensen, Noah J. Needler, Brian K. Hajek *(Ohio State)*

10:50 a.m.
Full-Field Velocity Measurement of Jets Injecting into Crossflow within a Rod Bundle, Noushin Amini, Carlos E. Estrada-Perez, Stephen D. Fortenberry, Y. A. Hassan *(Texas A&M)*

Nuclear Methods in Materials Research—I,

sponsored by IRD. *Session Organizer:* Nolan Hertel *(Georgia Tech)*. *Chair:* Nolan Hertel [Track 1]

Dreams D

8:30 a.m.
The Global Nuclear Energy Partnership (GNEP) and the Need for Precision Nuclear Data, Tony S. Hill *(LANL)*

8:55 a.m.
GNEP Funded Fission Measurement Program, Fredrik Tovesson *(LANL)*

9:20 a.m.
A Time Projection Chamber for Precision ^{239}Pu(n,f) Cross Section Measurement, Mike Heffner *(LLNL)*

9:55 a.m.
Towards a Precision ^{235}U/H(n,n)H Measurement, T. N. Massey, S. M. Grimes *(Ohio Univ)*, T. S. Hill *(LANL)*

10:20 a.m.
Preliminary Collimator Design for a Time Projection Chamber Installation at LANSCE, N. Hertel, E. Burgett *(Georgia Tech)*, T. Hill *(LANL)*

10:45 a.m.
Developing a Software and Computing Framework for the NERI-c TPC, J. L. Klay *(California Polytechnic State Univ, San Luis Obispo)*

The PHEBUS Experiment and Analysis Program—I, sponsored by NISD. *Session Organizer:* Dana A. Powers *(SNL)*. *Cochairs:* Bernard Clément *(Institut de Radioprotection et de Sûreté Nucléaire)*, Dana A. Powers [Track 4]

Dreams G
8:30 a.m.
Description of the Phébus FP Experimental Programme, B. Simondi-Teisseire, P. March *(Institut de Radioprotection et de Sûreté Nucléaire)*

9:00 a.m.
Analysis of the PHEBUS FPT3 Core Degradation Using Severe Accidents Codes (ICARE/CATHARE, ATHLET-CD, MELCOR), Georges Repetto *(Institut de Radioprotection et de Sûreté Nucléaire)*, Jon Birchley *(Paul Scherrer Inst)*, Tilman Drath *(Ruhr-Universität Bochum)*, Henrique Austregesilo *(Gesellschaft für Anlagen- und Reaktorsicherheit GRS)*

9:30 a.m.
FPT0 and FPT1 PHEBUS Tests: Post-mortem Examination Interpretation, M. Barrachin *(Institut de Radioprotection et de Sûreté Nucléaire)*

10:00 a.m.
Bundle Degradation Behaviour in the Phebus FP Tests Derived from their Post Irradiation Examination (PIE), D. Bottomley *(Inst for Tranuranium Elements)*, S. Schlutig *(Institut de Radioprotection et de Sûreté Nucléaire)*, S. Brémier *(Inst for Tranuranium Elements)*, M. Barrachin, A. De Bremaecker *(Institut de Radioprotection et de Sûreté Nucléaire)*, C. T. Walker, J-P. Glatz, D. Papaioannou, J-L. Arnoult, D. Baudot *(Inst for Tranuranium Elements)*, B. Simondi-Teisseire *(Institut de Radioprotection et de Sûreté Nucléaire)*, R. Restani, D. Gavillet *(Paul Scherrer Institut)*

10:30 a.m.
Post-test Calculations of the Experiments PHEBUS FPT2 and FPT3 with the Code ATHLET-CD/SOPHAEROS, Henrique Austregesilo, Christine Bals, Klaus Trambauer *[Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH]*

11:00 a.m.
Assessment of MELCOR Severe Accident Analysis Code Using the Phebus FP Experiments, Joonyub Jun, Randall O. Gauntt, Larry L. Humphries *(SNL)*

ANSI/ANS Standard for Criticality Safety Engineer Training and Qualification–Panel, sponsored by NCSD. *Session Organizer:* James A. Morman *(ANL)*. *Chair:* James A. Morman [Track 4]

Dreams H
8:30 a.m.
The American Nuclear Society has recently issued a standard that defines the content elements of a training and qualification program for nuclear criticality safety engineers. This standard, ANSI/ANS-8.26, Criticality Safety Engineer Training and Qualification Program, provides guidance for the content of training programs for those responsible for developing the analyses, controls, and safety documentation for the safe handling of fissile materials. This session will begin with several presentations that explain the target audience for this standard, the qualification levels defined in the standard, the content elements of the training and qualification program, and its expected relation to current U.S. Department of Energy and Nuclear Regulatory Commission qualification requirements. The presentations will be followed by an open discussion during which members of the 8.26 working group and the audience will exchange ideas on the implementation of the standard and how it relates to other criticality safety training requirements defined by regulatory bodies.

PANELISTS:
- J. Morman *(ANL)*
- A. Garcia *(DOE-ID)*
- J. Hicks *(DOE/NNSA)*
- L. Paulson *(GNF)*
- T. Powell *(NRC)*
- K. Wessels *(Nuclear Fuel Svc)*

Modeling, Analysis, and Licensing Issues Related to Common-Cause Failure in Digital Instrumentation and Control Systems for Digital Upgrades from Analog Systems, sponsored by NISD. *Session Organizer:* Charles Martin *(DNFSB)*. *Cochairs:* Charles Martin, Kevin O'Kula *(Washington SMS)* [Track 4]

Wonder A
8:30 a.m.
Building a Reliability Model of a Digital System, G. Martinez-Guridi, T. L. Chu, M. Yue *(BNL)*

9:00 a.m.
Digital I&C Operating Experience in the US, Bruce Geddes *(Southern Engineering Services)*, Ray Torok *(EPRI)*

9:30 a.m.
Common-Cause Failure in Digital I&C—Assessing Susceptibility and Ensuring Adequate Protection, Raymond C. Torok *(EPRI)*, Thuy Nguyen *(Électricité de France)*

10:00 a.m.
Considerations for Common Cause Failures of the Digital I&C System in the US-APWR plant, Masafumi Utsumi *(Mitsubishi Heavy Industries, Ltd.)*

10:30 a.m.
Hardware-in-the-Loop (HIL) Testing of Nuclear Instrumentation and Control Equipment, Sean M. Smith *(Lockheed Martin)*

Safety of Spent Nuclear Fuel Transport–Panel, sponsored by FCWMD. *Session Organizer:* Bobby Middleton *(SNL)*. *Chair:* Bobby Middleton [Track 4]

Wonder B
8:30 a.m.
One obstacle to public acceptance of nuclear power today involves handling and storage of spent nuclear fuel. Many of the more public complaints about nuclear fuel involve the transport of the fuel from one place to another. We propose a panel discussion in which we bring together professionals both from the nuclear community and from outside the nuclear community to discuss the issues related to transport of spent nuclear fuel. The goal is to start a dialogue between the nuclear community and those who oppose the growth of nuclear power based on either real or perceived risks within the industry.

PANELISTS:

- Spent Fuel Transportation in the State of Georgia, James (Jim) Hardeman *(Georgia's Environmental Radiation Program)*
- What Harry Reid Doesn't Know, or at Least Won't Admit, Jack Edlow *(Edlow International)*
- Factors for Route Selection: How Many Do You Need, Judith A. Holm *(DOE)*
- State of Nevada Recommendations for Yucca Mountain Transportation Safety and Security, Robert J. Halstead *(State of Nevada Agency for Nuclear Projects)*
- Da Nile is Not the Best Nuclear Transport Route, Marvin Resnikoff *(Waste Management Assoc)*

Innovations in Nuclear Engineering Education, sponsored by ETD. *Session Organizers:* Peter F. Caracappa *(RPI)*, Richard Coe *(Excelsior College)*. *Chair:* Peter F. Caracappa [Track 9]

Wonder D

8:30 a.m.
Development of a Two-Year Associates Degree in Nuclear Quality Control Technology Supporting the Nuclear Power Industry, Randy L. Etter *(Advanced Technology Center)*, William H. Miller, Gayla M. Neumeyer *(Univ of Missouri, Columbia)*

8:55 a.m.
Excelsior College: Support for Nuclear Industry Training and Development, Jane LeClair *(Excelsior College)*, Harpal Dhillon *(George Washington Univ)*

9:20 a.m.
TAMU Nuclear Safety Curriculum Development for a 21st Century Workforce, K. Vierow, F. Best, J. Ford, Y. Hassan, S. McDeavitt, J. Ragusa, W. D. Reece, L. Shao, P. Tsvetkov *(Texas A&M)*

9:45 a.m.
Curriculum Leading to a Masters Degree in Applied Science, with Emphasis on Nuclear Environmental Impact Assessments, Robert C. Amme, Zeev Shayer *(Univ of Denver)*

10:10 a.m.
Development of a Joint US-RF Educational Program in Advanced Energy Technologies, R. Sagdeev *(Univ of Maryland)*, P. Tsvetkov *(Texas A&M)*, W. Sadowski *(Univ of Maryland)*, G. Maldonado *(Univ of Tennessee)*, A. Kritz *(Lehigh Univ)*, J. Gehin *(ORNL)*, Y. Gohar *(ANL)*, C. Liu *(Univ of Maryland)*, J. Ragusa, W. Charlton *(Texas A&M)*, G. Bateman *(Lehigh Univ)*, M. DeHart *(ORNL)*

Computational Methods: General, sponsored by MCD. *Session Organizer:* Dmitriy Anistratov *(NCSU)*. *Chair:* Todd Urbatsch *(LANL)* [Track 7]

Magic Kingdom Ballroom 1

8:30 a.m.
An Improved Algorithm for Calculating the Number of IMC Source Particles, Todd Urbatsch, Scott Mosher *(LANL)*

8:55 a.m.
Coated Particle Fuel Modeling by a Multiscale Approach, Victor Blanc *(CEA/CNRS)*, Bruno Michel *(CEA)*, Jean-Claude Michel *(CNRS)*

9:20 a.m.
The Need for All-Speed Flow Models for Density Driven Flows in Reactor Safety Simulation, R. C. Martineau, R. A. Berry, K. D. Hamman, D. A. Knoll *(INL)*

9:55 a.m.
Unified Approach to the Thermodynamics of Fission Products in Uranium Oxide, Pankaj Nerikar, Taku Watanabe, Simon R. Phillpot, Susan B. Sinnott *(Univ of Florida)*

Reactor Physics: General—I, sponsored by RPD. *Session Organizer:* Bojan Petrovic *(Georgia Tech)*. *Chair:* Juan Luis Francois *(Universidad Nacional Autónoma de México)* [Track 7]

Magic Kingdom Ballroom 2

8:30 a.m.
Combined Erbia and IFBA Fuel for the IRIS Reactor, Fausto Franceschini *(Westinghouse)*, Bojan Petrovic *(Georgia Tech)*

8:55 a.m.
Effect of Lattice-Level Adjoint Weighting on the Effective Delayed Neutron Fraction in CANDU Reactors, Eleodor Nichita *(Univ of Ontario Inst of Technol)*

9:20 a.m.
Covariance Representation in the Resonance Region: Application to ^{233}U Data, L. Leal, D. Wiarda, G. Arbanas *(ORNL)*

9:45 a.m.
Adaptive Simulation for a Model of the ZPR-6 Fast Critical Reactor, Masood Iqbal, Hany Abdel-Khalik, Paul Turinsky, Tracy Stover *(NCSU)*

10:10 a.m.
Comparison of LOCA Power Transient Uncertainty Analysis Methods, O. J. Shaikh, J. C. Luxat *(McMaster Univ)*

10:35 a.m.
Homogenous vs. Heterogeneous Microsphere and Fuel Pellets Modeling in GT-MHR, Zeev Shayer *(Colorado School of Mines)*

11:00 a.m.
A New Approach for the Experimental Determination of the Spectral Indices $^{28}\rho$ and $^{25}\delta$, Leda C. C. B. Fanaro, Adimir dos Santos, Rogério Jerez *(Instituto de Pesquisas Energéticas e Nucleares)*

Current Issues in Environmental Restoration and Decommissioning, sponsored by ESD; cosponsored by DDRD. *Session Organizer:* James Byrne *(Byrne & Assoc)*. *Chair:* Nadia Glucksberg *(MACTEC)* [Track 5]

Magic Kingdom Ballroom 3

8:30 a.m.
Incorporation of HPAC 5.0 Transport Phenomenology to RASCAL's Radiological Releases, Robert Sanders *(ORNL)*

8:55 a.m.
Effective Dosimetric Half-Life of ^{137}Cs Soil Contamination, G. Timothy Jannik, Michael H. Paller *(SRNL)*, Peter D. Fledderman *(SRS)*

9:20 a.m.
PCB Soil Remediation Following Demolition of the Reactor Containment Building: Lessons Learned from CYAPCO's Haddam Neck Plant, Nadia Glucksberg, Jay Peters, Miles van Noordennen *(MACTEC)*, Gerard van Noordennen *(CYAPCO)*

9:45 a.m.
Implementation of an Integrated Regulatory Approach to Decommission a Depleted Uranium Site, Jay Peters, Jeffrey W. Lively *(MACTEC)*

10:10 a.m.
Development of a Full-core CANDU Model for a Quantification of Decommissioning Wastes, Dong-Keun Cho, GwangMin Sun, JongWon Choi *(KAERI)*, Hak-Soo Kim, Eun-Kyu Lee, Ho-Yeon Yang, Chan-Kook Moon *(Nuclear Engineering & Technol Inst)*

10:35 a.m.
Development Plan on Cost Estimation System for Decommissioning of Nuclear Reactor in Korea, Hak-Soo Kim, Eun-Kyu Lee, Ho-Yeon Yang, Chan-Kook Moon *(Nuclear Engineering & Technol Inst)*, Dong-Keun Cho, Gwang-Min Sun *(KAERI)*

Aging Management Issues—"Life Beyond 60"–Panel, sponsored by OPD. *Chair:* C. E. Carpenter *(NRC)* [Track 2]

Magic Kingdom Ballroom 4
8:30 a.m.
Commercial reactors have an initial 40-year operating license with the option for an additional 20-year renewal period. About 90% of the commercial fleet either have received license renewals (~50 units), have applications under regulatory review (~10), or have announced their intention to apply for license extension (~30). The United States gets about 20% of its electricity from nuclear power. If these plants operate beyond the initial renewal period, this could be significant for energy security and in limiting production of greenhouse gases that contribute to global warming. This session will focus on several key areas for potential research activities that could lead into extending the operating life beyond 60 years, as well as opportunities that could benefit from public/private/international collaboration.

PANELISTS:
- Samson Lee *(NRC)*
- Robert Jordan *(DOE)*
- John Gaertner *(EPRI)*
- Garry Young *(Entergy Nuclear)*
- Jim Reilly *(SCE)*
- Atam Rao *(IAEA)*

WEDNESDAY, JUNE 11, 2008 • 1:00 P.M.

Computational Fluid Dynamics Analysis of Rod Bundles, sponsored by THD. *Chair:* Hisashi Ninokata *(Tokyo Inst Technol)* [Track 7]

Dreams A
1:00 p.m.
Large-eddy Simulation of Turbulent Flow in a Rod Cluster, Maxim Popov *(Sarov Laboratories)*, Constantine P. Tzanos *(ANL)*, Fred Mendonça *(CD-adapco)*

1:20 p.m.
DES and Transient RANS Computations of Flow Through Rod Bundle, Debashis Basu, Kaushik Das, Scott Painter *(Southwest Research Inst)*

1:40 p.m.
CFD Sensitivity Analysis of a Fast Reactor Assembly, Kurt D. Hamman, Ray A. Berry, Richard C. Martineau, Dana Knoll *(INL)*

Computational Thermal Hydraulics—II, sponsored by THD. *Chair:* Donna P. Guillen *(INL)* [Track 7]

Dreams A
2:05 p.m.
Effects of Inlet Boundary Condition Profiles on Predictions of Interfacial Area Concentration in FLUENT with IATE, Xia Wang, Xiaodong Sun *(Ohio State)*

2:25 p.m.
Comparison of RELAP5-3D/ATHENA and ANSYS/FLOTRAN Thermal-Hydraulic Results, Juan J. Carbajo, Joel McDuffee, A. Louis Qualls *(ORNL)*

2:45 p.m.
Applicability of Heat Transfer Coefficient Correlations to Single-phase Convection in Liquid Metals, Juan J. Carbajo *(ORNL)*

3:05 p.m.
Simulation of Thermal Stratification in Inlet Nozzle of Steam Generator, Bum-Soo Youn, Sang-Nyung Kim *(Kyung Hee Univ)*

3:25 p.m.
Thermal-Hydraulic Modeling of Ramp Reactivity Insertion Accident in SAFARI-1 Research Reactor Using RELAP/SCDAPSIM MODE3.4 Code, A. Sekhri, R. Prinsloo, A. J. D'Arcy *(NECSA)*

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

Nuclear Methods in Materials Research—II, sponsored by IRD. *Session Organizer:* Nolan Hertel *(Georgia Tech)*. *Chair:* Nolan Hertel [Track 1]

Dreams D
1:00 p.m.
Future Upgrades to the Time Projection Chamber, Tony S. Hill *(LANL)*

1:25 p.m.
NERI-C TPC Project Plan and Progress, N. Hertel, E. Burgett *(Georgia Tech)*, T. Hill *(LANL)*

1:50 p.m.
Development of an Experiment Process for the Advanced Test Reactor, Donna Post Guillen, Jeffrey D. Bryan, Dan Ogden *(INL)*

2:15 p.m.
High Resolution Neutron Imaging of Temperature-Driven Flow in Polymer Electrolyte Fuel Cells, S. Kim, A. K. Heller, M. C. Hatzell, M. M. Mench *(Penn State)*, D. S. Hussey, D. L. Jacobson *(NIST)*

2:40 p.m.
MCNPX Calculations for the STIP-IV Irradiation Program at PSI, L. Zanini, Y. Dai *(Paul Scherrer Institut)*

3:05 p.m.
Neutron Computed Tomographic System for Water Quantification, K. Heller, L. Shi, M. M. Mench, J. S. Brenizer *(Penn State)*, invited

The PHEBUS Experiment and Analysis Program—II, sponsored by NISD. *Session Organizer:* Dana A. Powers *(SNL)*. *Cochairs:* Nathalie Girault *(Institut de Radioprotection et de Sûreté Nucléaire)*, Dana A. Powers [Track 4]

Dreams G
1:00 p.m.
Main Lessons Learnt from the Phebus FP Programme and Follow-up, B. Clément *(Institut de Radioprotection et de Sûreté Nucléaire)*, R. Zeyen *(Joint Research Centre, Inst for Energy)*

1:30 p.m.
Preliminary Characterization of Fission Product Chemical Behavior and Transport in the Phebus FPT2 Circuit Line, A. Bieliauskas, B. Toth *(European Commission Joint Research Centre, Inst for Energy)*

2:00 p.m.
Fission Product Behaviour in the PHEBUS Containment, P. March *(Institut de Radioprotection et de Sûreté Nucléaire)*

2:30 p.m.
LWR Severe Accident Simulation: Fission Product Behavior in FPT2 Experiment, Nathalie Girault, Roland Dubourg, Loic Bosland, C. Fiche *(Institut de Radioprotection et de Sûreté Nucléaire)*

3:00 p.m.
Formation of Organic Iodide in the Containment in Case of a Severe Accident, Séverine Guilbert, Loïc Bosland, Sylvie Fillet, Didier Jacquemain, Bernard Clement *(Institut de Radioprotection et de Sûreté Nucléaire)*, François Andreo *(EdF)*, Gérard Ducros *(CEA)*, Shirley Dickinson *(Nexia Solutions)*, Luis Herranz *(CIEMAT)*, Joanne Ball *(AECL)*

Advances in Fixed Neutron Absorber Applications, sponsored by NCSD. *Session Organizer:* Hans Toffer *(Company Consultant)*. *Chair:* Kevin Carroll *(LLNL)* [Track 4]

Dreams H
1:00 p.m.
Assessment of Compliance with ANSI/ANS-8.21 for an Existing Spent Fuel Storage System, Katherin L. Goluoglu *(ORNL)*

1:25 p.m.
Fixed Neutron Absorber Applications at Hanford, David Erickson, Steve Kessler *(Fluor Government Group)*, Hans Toffer *(Consultant)*

1:50 p.m.
Quantitative Determination of Boron in Boron Steel by Prompt Gamma-ray Activation Analysis, GwangMin Sun, Dong-Keun Cho *(KAERI)*, Hak-Soo Kim, Eun-Kyu Lee, Ho-Yeon Yang, Chan-Kook Moon *(Nuclear Engineering & Technol Inst)*

2:15 p.m.
Fixed Burnable Neutron Absorber Credit for Fresh and Irradiated BWR Fuel, Dennis Mennerdahl *(E. Mennerdahl Systems)*

Data, Analysis, and Operations for Nuclear Criticality Safety—II, sponsored by NCSD; cosponsored by YMG. *Session Organizer:* Nichole Ellis *(Ellis Nuclear Eng LLC)*. *Chair:* Kevin Carroll *(LLNL)* [Track 4]

Dreams H
2:45 p.m.
Evaluation of the HTC Critical Experiment Data for Spent Nuclear Fuel, Donald E. Mueller *(ORNL)*

3:10 p.m.
Extensible SCALE Intelligent Text Editor – ExSITE, Aaron M. Fleckenstein *(Oak Ridge Inst for Science & Education)*, Bradley T. Rearden *(ORNL)*

3:35 p.m.
Reactivity Suppression Approaches in Spent Fuel Pools, Vefa N. Kucukboyaci, Michael G. Anness, Ho Q. Lam *(Westinghouse)*

4:00 p.m.
A Quantitative Approach to Implement the Double Contingency Principle, Burton Rothleder *(DOE)*

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

NJOY–Tutorial, sponsored by RPSD. *Session Organizer:* Albert C. Kahler *(LANL)*. *Chair:* Albert C. Kahler [Track 7]

Wonder A
1:00 p.m.
This half-day tutorial will provide a brief description and demonstration of installing and using the NJOY Nuclear Data Processing System. NJOY can be and has been used in a variety of computing environments, from large mainframe systems to laptops. This lecture will be driven from a Windows laptop PC using the freely available G95 fortran compiler. Sample problems that create continuous energy (ACE) files necessary for use with the Los Alamos National Laboratory (LANL) MCNP/MCNPX codes will be run and the output examined. Jobs using the newly installed ERRORJ covariance module will also be run and their outputs reviewed. A limited number of LANL laptop computers will be available for use. Participants who have already obtained the NJOY99 computer program package from the Radiation Safety Information Computational Center (RSICC) or the Nuclear Energy Agency (NEA) are encouraged to bring their own laptops. Discussion by users of ongoing and anticipated future needs is encouraged. No previous experience with the NJOY code system or the Evaluated Nuclear Data File is assumed.

Fuel Cycle Waste Forms and Strategies, sponsored by FCWMD. *Session Organizer:* Phillip Wheatley *(INL)*. *Chair:* Jay Roach *(INL)* [Track 3]

Wonder B
1:00 p.m.
Dynamic Modeling of the Nuclear Fuel Cycle without Calling Reactor Physics Models, S. Yee *(Ohio State)*, S. J. Piet *(INL)*, X. Sun *(Ohio State)*

1:30 p.m.
The Temperature, Oxygen, and Fuel Chemistry Dependence of UO_2 Dissolution under Repository Conditions, Amanda Casella *(Univ of Missouri, Columbia)*, Brady Hanson *(PNNL)*, William Miller *(Univ of Missouri, Columbia)*

2:00 p.m.
A Materials Study of Optimized Iodine Waste Forms, Tina M. Nenoff, Nathan W. Ockwig, James L. Krumhansl, Terry J. Garino *(SNL)*

2:30 p.m.
Candidate Alloy Systems for a GNEP Metallic Wasteform, Marie C. Kane, Thad M. Adams, Robert L. Sindelar *(SRNL)*

3:00 p.m.
Waste Forms for Technetium-Bearing Waste Streams, W. L. Ebert *(ANL)*

3:30 p.m.
Determining Bond Sodium in Plenum Region of Spent Driver Fuel, D. Vaden, S. X. Li *(INL)*

Developments in Nuclear Talent Pipeline and Workforce Planning–Panel, sponsored by ETD. *Session Organizer:* John Wheeler *(Entergy)*. *Chair:* John Wheeler [Track 9]

Wonder D
1:00 p.m.
This panel will focus on recent developments in creating the nuclear workforce of the future. A diverse group of panelists will discuss their experiences in attracting and retaining young-generation employees, innovations in developing new nuclear talent, and partnerships designed to accelerate developing new sources to supply the nuclear talent pipeline. Topics will include lessons learned from the perspective of the nuclear utility intern, specific programs to improve retention and accelerate new-employee development, and industry-wide perspectives on nuclear workforce development.

PANELISTS:
- Matthew Fallacara *(Georgia Tech)*
- Thomas Bradish *(Palo Verde Nuclear Station, Arizona Power)*
- Clarence Fenner *(STPNOC)*
- Carol Berrigan *(NEI)*

Computational and Mathematical Modeling for Radiation Detection and Measurement—II, sponsored by MCD. *Session Organizers:* Todd Palmer *(OSU)*, Robin Gardner *(NCSU)*. *Chair:* Robin Gardner [Track 7]

Magic Kingdom Ballroom 1
1:00 p.m.
Modification of the Monte Carlo – Library Least-Squares (MCLLS) Inverse Approach for Cargo Radiation Monitoring Applications, Robin P. Gardner *(NCSU)*, invited

1:25 p.m.
Dramatic Photopeak Extraction Processed from Sodium Iodide Gamma Detectors Using ASEDRA, Eric Lavigne, Glenn Sjoden, James Baciak, Rebecca Detwiler *(Univ of Florida)*

1:50 p.m.
Two Monte Carlo Approaches for the Generation of Scintillation Detector Response Functions (DRF's), Zhijian Wang, Daniel P. Speaker, Robin P. Gardner *(NCSU)*

2:15 p.m.
Constructing the Response Function for a BGO Detector Using MCNP5 and a Deconvolution Algorithm in the Low Gamma Energy, Jangyong Huh, Alireza Haghighat, James Baciak *(Univ of Florida)*

2:40 p.m.
Using the Marquardt Method for Solutions of Inverse Transport Problems in Two-Dimensional Cylinders, Keith C. Bledsoe, Jeffrey A. Favorite *(LANL)*

Reactor Physics Design, Validation, and Operating Experience, sponsored by RPD. *Session Organizer:* Bojan Petrovic *(Georgia Tech)*. *Chair:* Ugur Mertyurek *(GNF)* [Track 1]

Magic Kingdom Ballroom 2
1:00 p.m.
Multi-Objective Fuel Loading Optimization Employing Discontinuous Penalty Functions in Simulated Annealing, Tong Kyu Park, Han Gyu Joo, Chang Hyo Kim *(Seoul Natl Univ)*

1:25 p.m.
Refueling Simulation of a Transition Core from Natural Uranium to DUPIC Fuel, Hangbok Choi *(General Atomics)*

1:50 p.m.
Lattice Optimization with eSAFETY & eSAVING Models in BALO, Albert Gu, Peng Wang, Ralph Grummer, Doug Pruitt *(AREVA NP)*

2:15 p.m.
An Evaluation of Vented Gas Cooled Fast Reactor Fuel, S. A. McKee, M. J. Driscoll *(MIT)*

2:40 p.m.
Comparison of 4% and 8% Enriched LWR Fuel for Innovative Small LWRs, Alexey Soldatov, Todd S. Palmer *(Oregon State Univ)*

3:05 p.m.
Thorium Fuel Rod Irradiation and a LWR Benchmark Setup for the Verification of Neutronic Codes, R. Nabbi *(Research Centre Juelich)*, D. F. da Cruz *(NRG)*, W. von Lensa *(Research Centre Juelich)*, M. Verwerft *(SCK/CEN)*

3:30 p.m.
Improving Fuel Utilization in Innovative, Small LWRs, Alexey Soldatov, Todd S. Palmer *(Oregon State Univ)*

RADTRAN: What It Is and What It Does–Tutorial, sponsored by ESD. *Chair:* Ruth Weiner *(SNL)* [Track 11]

Magic Kingdom Ballroom 3
1:00 p.m.
RADTRAN, developed and copyright by Sandia National Laboratories, is a program that assesses risks and consequences of transporting radioactive materials. RADTRAN, bundled with the input file generator RADCAT, is downloadable and runs on any PC. The workshop will present the theoretical bases for the RADTRAN code and how it works, and will provide hands-on training in the use of RADTRAN. Potential attendees should fill out the application to download RADCAT/RADTRAN from https://radtran.sandia.gov/radcat and should also download the RADCAT user guide. Approval to download RADCAT/RADTRAN takes no more than a day or two. For radioactive materials transportation in the United States, RADTRAN uses the routing code TRAGIS, a client-server program run out of Oak Ridge National Laboratory. Anyone wishing to use TRAGIS should apply via the Web site https://tragis.ornl.gov; approval to use TRAGIS may take a week or more. TRAGIS will also be demonstrated at the workshop.

SPEAKERS:
- Ruth Weiner *(SNL)*
- Matt Dennis *(SNL)*

Control Strategies in Next Generation Reactors, sponsored by OPD. *Chair:* Belle Upadhyaya *(Univ of Tennessee)* [Track 2]

Magic Kingdom Ballroom 4
1:00 p.m.
Plant Control Strategies for the IRIS Nuclear Power Plant, G. D. Storrick, M. D. Carelli *(Westinghouse)*, B. Petrovic *(Georgia Tech)*

1:25 p.m.
A Load-Following Controller for an Advanced Power Reactor (APR1400), Dong Hyuk Lim, Man Gyun Na *(Chosun Univ)*, Moon-Ghu Park *(KEPRI)*

1:50 p.m.
Multi-Intelligent Agents: Potential Applications to Next Generation Nuclear Plants, Robert E. Uhrig *(Univ of Tennessee)*, Lefteri H. Tsoukalas, Rong Gao *(Purdue Univ)*

2:15 p.m.
Construction – Testing An Overlooked Interface?, Jim Carter *(Navigant Consulting)*

2:40 p.m.
Design of a Model Predictive Controller for the IRIS Helical Coil Steam Generator, B. R. Upadhyaya, Xiaojia Xu *(Univ of Tennessee)*

3:05 p.m.
Supervisory Controller for Automated Nuclear Plant Startup, J. Michael Doster, Ryan M. Lipsky *(NCSU)*

3:30 p.m.
Mars, the Moon, and the Ends of the Earth: Autonomy for Small Reactor Power Systems, Richard T. Wood *(ORNL)*

THURSDAY • JUNE 12, 2008

7:30 AM – 2:00 PM	**MEETING REGISTRATION**
8:00 AM – 10:00 AM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #6** (see page 54)
8:30 AM – 11:30 AM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** • Decommissioning, Decontamination, and Reutilization Technologies–Panel • Biology and Medicine: General • Human Reliability and Probabilistic Risk Assessments • Nuclear Criticality Safety Standards–Forum • Criticality Safety and Nuclear Packaging • Introduction to Monte Carlo–Tutorial • Effects of New Fuel Cycles on Low-Level, Transuranic, and High-Level Waste Repositories • Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—I • ENDF/B-VII.0 and JEFF-3.1: Introduction and Validation • Reactor Physics: General—II • Uranium Enrichment and Nonproliferation: Challenges in the Nuclear Renaissance–Panel • Advanced/Gen-IV Reactor Innovations and Advancements—I
8:30 AM – 11:30 AM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
9:30 AM – 4:30 PM	**TECHNICAL TOUR:** "Jet Propulsion Laboratory (JPL)"
10:00 AM – 12:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 54)
1:00 PM – 3:30 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 54)
1:00 PM – 4:00 PM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** • Current Issues in Nuclear Facility Safety • Data, Analysis, and Operations for Nuclear Criticality Safety—III • Monte Carlo Burnup/Transmutation–Tutorial • Process Monitoring and Event Detection for Enhancing Nuclear Nonproliferation • Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—II • Advanced/Gen-IV Reactor Innovations and Advancements—II • Neutron Activation Analysis: Status After Five Decades–Tutorial
1:00 PM – 4:00 PM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
1:00 PM – 6:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TUTORIAL SESSION** (see page 54)

THURSDAY, JUNE 12, 2008 • 8:30 A.M.

Decommissioning, Decontamination, and Reutilization Technologies–Panel, sponsored by DDRD. *Session Organizer:* Glen Rae *(ReNuke)*. *Chair:* Glen Rae [Track 3]

Dreams A
8:30 a.m.
Multiple decommissionings in both the commercial and government sectors have taken place over the past few years. Many technologies have been developed to make the decommissioning and decontamination process simpler and more effective. Some of these specific technologies will be presented and discussed for the advancement of future technologies as new projects emerge.

PANELISTS:
- Segmentation and Removal of the Carolinas-Virginia Tube Reactor (CVTR) Moderator Tank, Steve Garner *(MOTA)*
- Selecting the Rancho Seco Reactor Building Demolition Technology, Mark Lewis *(EnergySolutions)*
- Decommission Technologies for the Disposition of the Plum Brook Reactor Cadmium Rods, John Lepere *(WMG)*
- Production-Scale Solids and Specific Ion Removal (ISM) Utilizing the Seeding and Filtration Electronically (SAFETM) EC System, Mark Denton *(EnergySolutions)*
- High-Pressure Liquid Nitrogen Decon. Cutting and Sludge Removal Applications, Mark Denton *(EnergySolutions)*
- Reutilization of San Onofre Site, Tim Clepper *(SONGS)*

Biology and Medicine: General, sponsored by BMD. *Session Organizer:* Robert Greenberg *(NIST)*. *Chair:* Elisabete Fernandes *(CENA)* [Track 6]

Dreams D
8:30 a.m.
Evaluation of Ratios of Maximum Standard Uptake Values as Predictors of Mediastinal Lymph Node Pathology, Michael B. Wayson *(Univ of Florida)*, Ganesh D. Arora, Bryan M. Hurlbut *(Clinical P.E.T of Ocala)*

8:55 a.m.
Reconstruction of Integrals Along Lines From Compton Camera Data, Bruce Smith *(Univ of Texas at San Antonio)*

9:20 a.m.
Work Environment Dose Rates Assessment at a PET/CT Imaging Center, Yung-Chang Lai, Yu-Wen Chen, Ying-Fong Huang *(Kaohsiung Medical Univ)*

9:45 a.m.
Nanoparticle Diffusion in Tissues and Tumors: Some Computational Results, Sunita R. Boddu, Sudarshan K. Loyalka *(Univ of Missouri, Columbia)*

10:10 a.m.
Evaluation of FSA for Determining ^{90}Sr in Bioassay Samples, Alexander A. Plionis *(LANL/Univ of Texas, Austin)*, Dominic S. Peterson, Edward R. Gonzales *(LANL)*

Human Reliability and Probabilistic Risk Assessments, sponsored by NISD. *Session Organizer:* Lawrence M. Zull *(DNFSB)*. *Cochairs:* Lawrence M. Zull, Amy Hull *(NRC)* [Track 4]

Dreams G
8:30 a.m.
Bounding the Number of Concurrent Spurious Operations to Examine in Nuclear Plant Fire Protection, Raymond H. V. Gallucci *(NRC)*

9:00 a.m.
Preservation of Plant Operatives' Technical Experience Using Knowledge Management Instruments at Sellafield, John Day *(BNG)*, Eelco Kruizinga *(DNV Netherlands)*, Michael Kelleher *(DNV United Kingdom)*

9:30 a.m.
Next Generation PSA: Insights from Industry Responses to Catastrophic Accidents, William R. Nelson *[Det Norske Veritas (USA), Inc.]*

10:00 a.m.
Why We Really Don't Perform Self-Assessments in Nuclear Power: Or Do We?, Raymond J. Riha *(Northrop Grumman MS/DMS/C3IS)*

Nuclear Criticality Safety Standards–Forum, sponsored by NCSD. *Session Organizer:* Thomas P. McLaughlin *(Consultant)*. *Chair:* Thomas P. McLaughlin [Track 4]

Dreams H
8:30 a.m.

Criticality Safety and Nuclear Packaging, sponsored by NCSD. *Session Organizer:* Pran K. Paul *(Y-12 National Security Complex)*. *Chair:* Pran K. Paul [Track 4]

Dreams H
10:05 a.m.
Traveller – Criticality Assessment for Multilateral Approval of a PWR Fresh Fuel Package, Michael O. Connelly, Peter J. Vescovi *(Westinghouse)*

10:30 a.m.
SARP Criticality Evaluation of ES-3100 Fissile Material Package for Air Transport, John F. DeClue *(B & W Technical Services)*

10:55 a.m.
Accelerated-Aging of Shipping Package O-Rings for Pu Storage, E. N. Hoffman, T. E. Skidmore *(SRNL)*

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

Introduction to Monte Carlo–Tutorial, sponsored by RPSD; cosponsored by YMG. *Session Organizer:* John Hendricks *(LANL)*. *Chair:* Forrest B. Brown *(LANL)* [Track 7]

Wonder A
8:30 a.m.
The Monte Carlo tutorial is a hands-on session where attendees will learn how and practice setting up and running simple Monte Carlo problems. It is designed for those who have never run a Monte Carlo calculation before. But even expert users will benefit by trying recent capabilities of the MCNP/MCNPX family of Monte Carlo codes. Participants contacting the organizer (jxh@lanl.gov) in advance may be able to have the code on their personal laptops. Additional laptops will be brought to the session so that everyone will be able to try what is being demonstrated. In previous sessions, people who had never run a Monte Carlo problem before were now able to do simple problems.

Effects of New Fuel Cycles on Low-Level, Transuranic, and High-Level Waste Repositories, sponsored by FCWMD. *Chair:* Laurence Miller *(Univ of Tennessee)* [Track 3]

Wonder B
8:30 a.m.
Effects of Reactor, Fuel Cycle, and Repository Configurations on Environmental Impacts, Joonhong Ahn, Erwan Bouvier *(Univ of California, Berkeley)*, Tetsuo Ikegami *(Japan Atomic Energy Agency)*

9:00 a.m.
Repository Heat Load Analysis with Uncertainty from Advanced Fuel Cycles, J. Preston, M. Humberstone, S. Janson, L. F. Miller *(Univ of Tennessee)*

9:30 a.m.
Management of the TRU Waste Inventory Information for the Waste Isolation Pilot Plant, Sheila Lott, Beverly Crawford *(LANL)*, Russell Patterson *(DOE)*

10:00 a.m.
Plutonium Speciation in Salt-Based Repositories, Michael K. Richmann, Marian Borkowski, Donald T. Reed *(LANL)*

10:30 a.m.
Fuel Cycle Design and Analysis of a Subcritical Advanced Burner Reactor, Christopher Sommer, W. F. G. van Rooijen, W. M. Stacey *(Georgia Tech)*

11:00 a.m.
Safety and Dynamics Analysis of SABR—Subcritical Advanced Burner Reactor, Tyler Sumner, W. F. G. van Rooijen, W. M. Stacey *(Georgia Tech)*

Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—I, sponsored by OPD; cosponsored by ETD, YMG. *Chair:* William R. Corcoran *(NSRC)* [Track 2]

Wonder D
8:30 a.m.
The need for the benefits of nuclear technology increases as shown by such developments as the revitalization of the commercial nuclear power reactor community, the transformation of the nuclear defense industry, advances in nuclear medicine, and the efforts to find final solutions for the nuclear legacy issues. With this renaissance of nuclear technology comes an ever-increasing corporate responsibility to be a learning organization. Root cause analysis is a fundamental tool to help an organization learn from unintended consequences of its operations. To maintain high reliability in the critical nuclear technical arena will require root cause analysis programs that get to the roots of the organizational problems leading up to the events and corrective action programs that remedy these organizational underpinnings. This panel will be an interactive tutorial on the future of root cause analysis as a tool for organizational learning. Panelists will include seasoned professionals with proven root cause analysis experience in commercial reactors, naval reactors, U.S. Department of Energy nuclear activities, and other high-hazard enterprises.

PANELISTS:
- William R. Corcoran *(NSRC)*
- Gerald A. Harvey *(EnergX, LLC)*
- Richard N. Swanson *(Performance Management Initiatives, Inc.)*
- Bruce H. Hart *(WSRC)*
- Richard S. Hartley *(B & W Pantex)*
- Richard L. Higgins *(CH2M HILL Hanford, Inc.)*
- Michael D. Quinn *(WorkPlace Cornerstone Group, LLC)*
- Willis W. (Bill) Allen *(Washington TRU Solutions, LLC)*
- Alex J. House *(Dominion Energy)*

ENDF/B-VII.0 and JEFF-3.1: Introduction and Validation, sponsored by RPD. *Session Organizers:* Michael L. Zerkle *(Bechtel Bettis)*, Ken Kozier *(AECL)*. *Chair:* Michael L. Zerkle [Track 7]

Magic Kingdom Ballroom 1
8:30 a.m.
Impact of ENDF/B-VII.0 on MCNP5 Simulations of ZED-2 Critical Experiments, Ken S. Kozier, Ian Hill, Jim V. Donnelly *(AECL)*

9:00 a.m.
Reactivity Impact of Cross Section Library Update from ENDF/B-VI.8 to ENDF/B-VII.0 on BWR Fuel Burnup Calculations, Akiko Toishigawa, Tadashi Ikehara, Munenari Yamamoto, Hiromi Maruyama *(GNF–Japan)*

9:30 a.m.
Analysis of Godiva-IV Delayed-Critical Experiments, Russell D. Mosteller *(LANL)*

10:00 a.m.
Experimental Validation of JEFF-3 and ENDF/B-VII Files for LWR Applications, D. Bernard, A. Santamarina *(CEA)*

Reactor Physics: General—II, sponsored by RPD. *Session Organizer:* Bojan Petrovic *(Georgia Tech)*. *Chair:* Ivan Maldonado *(Univ of Tennessee)* [Track 7]

Magic Kingdom Ballroom 2
8:30 a.m.
Overview of PRISM Neutronics Codes, Cindy Fung Poon, Tang Wu, Eric P. Loewen *(GE-Hitachi Nuclear Energy)*

8:55 a.m.
Development of Methodology for Plutonium Categorization (II)—Improvement of Evaluation Function "Attractiveness," Masaki Saito *(Tokyo Inst Technol)*, Vladimir Artisyuk *(Obninsk State Technical Univ for Nuclear Power Engineering)*, Alan Takibayev, Kairat Ismailov, Hiroshi Sagara *(Tokyo Inst Technol)*

9:20 a.m.
Analysis of Minor Actinide Target Depletion in a Pressurized Water Reactor Lattice, Tom Greifenkamp *(Univ of Cincinnati)*, G. Ivan Maldonado *(Univ of Tennessee)*, Jess Gehin, Mark DeHart *(ORNL)*

9:45 a.m.
Design of a BWR Fuel with Plutonium and Minor Actinides Using Tabu Search, J. L. François, R. Guzmán, C. Martín del Campo *(Universidad Nacional Autónoma de México)*

10:10 a.m.
Plutonium and Minor Actinides Transmutation in Standard PWRs Fuel Assemblies, Bryan Bradley, Jean Ragusa *(Texas A&M)*

10:35 a.m.
Effect of Am on Protected Pu Production in the Blanket of FBR, Yoshitalia Meiliza, Masaki Saito, Hiroshi Sagara *(Tokyo Inst of Technol)*

11:00 a.m.
Thorium Based Fuel For In-Core Fuel Cycle Extension of the GT-MHR, Zeev Shayer *(Colorado School of Mines)*

Uranium Enrichment and Nonproliferation: Challenges in the Nuclear Renaissance–Panel, sponsored by FCWMD (in collaboration with SCNN). *Session Organizer:* Morris Hassler *(DOE)*. *Chair:* Morris Hassler [Track 3]

Magic Kingdom Ballroom 3
8:30 a.m.
This session will contain a panel of international experts from the uranium enrichment industry who will discuss current and future uranium enrichment facilities and approaches to protect against the proliferation of these technologies. The nuclear renaissance has increased the demand for enrichment services, and the industry is introducing new technologies and expanding capacities. With newer and more efficient enrichment technologies being introduced and expanded, the proliferation risk could increase if not strictly controlled. The goal of this panel is to give the audience the latest status on enrichment technologies and to share the protection measures in place to assure proliferation concerns are being adequately addressed.

PANELISTS:
- Robert Eby *(United States Enrichment Corporation)*
- Kirk Schnoebelen *(Urenco, Inc.)*
- Caroline Jorant *(AREVA)*
- Cheryl Collins *(GE-Hitachi Energy)*
- Adam Scheinman *(DOE/NNSA)*

Advanced/Gen-IV Reactor Innovations and Advancements—I, sponsored by OPD. *Chair:* Carter D. Savage *(DOE)* [Track 8]

Magic Kingdom Ballroom 4
8:30 a.m.
Ethanol Production Using Nuclear Power, Samuel Rosenbloom *(DOE)*, Charles W. Forsberg *(MIT)*

8:55 a.m.
Conceptual Core Design of Prototype LBE Cooled Fast Reactor, PATER, Myung-Hyun Kim, Keun-young Lee *(Kyung Hee Univ)*

9:20 a.m.
Fast Reactor Technology Preservation, D. W. Wootan, R. P. Omberg *(PNNL)*

9:45 a.m.
Online Fuel Reprocessing of a Liquid Fluoride Reactor, S. Yee, T. Blue, X. Sun *(Ohio State)*

10:10 a.m.
Natural Convection Induced Oxygen Transport in Liquid Lead Bismuth Eutectic, Taide Tan, Yitung Chen, Xianfang Tan, Hsuan-Tsung Hsieh *(UNLV)*

10:35 a.m.
PRISM Reactor Passive Safety Performance, José Maria Caro, Eric P. Loewen *(GE-Hitachi Nuclear Energy)*

11:00 a.m.
Facilitating the Export of New US Nuclear Technology to Advanced and Developing Countries via Advanced Transparency, Virginia D. Cleary *(SNL)*, Carmen Méndez *(Sociotecnia Solutions, LLC)*, Gary Rochau *(SNL)*

THURSDAY, JUNE 12, 2008 • 1:00 P.M.

Current Issues in Nuclear Facility Safety, sponsored by NISD. *Session Organizer:* Lawrence Zull *(DNFSB)*. *Cochairs:* Herbert Massie, Jr. *(DNFSB)*, Raymond Gallucci *(NRC)* [Track 4]

Dreams G
1:00 p.m.
Evolution of Nuclear Quality Assurance Standards, Charles R. Martin *(DNFSB)*

1:30 p.m.
Assurance of Nuclear Safety System Software—Towards Standardizing Proven Solutions, S. Seth *(DOE)*

2:00 p.m.
Uncertainty Analysis of Aerosol Removal in a Passive Reactor Containment Design in Design Basis Accidents, Donald A. Kalinich *(SNL)*, Jay Y. Lee *(NRC)*

2:30 p.m.
A Computational Study of Debris Bed Formation, Pavel Kudinov, Truc Nam Dinh *[Royal Inst of Technol (KTH)]*

3:00 p.m.
Enhancing Safety and Security of Nuclear Plants through System Integration, Gary Rochau, Virginia D. Cleary *(SNL)*, Carmen Méndez *(Sociotecnia Solutions, LLC)*

Data, Analysis, and Operations for Nuclear Criticality Safety—III, sponsored by NCSD; cosponsored by YMG. *Session Organizer:* Nichole Ellis *(Ellis Nuclear Eng LLC)*. *Chair:* Lon E. Paulson *(GE-Hitachi Nuclear Energy)* [Track 4]

Dreams H
1:00 p.m.
Criticality Challenges in Moving Historic Wastes from the LLWR to Sellafield, David Scowcroft *(Sellafield Limited)*

1:25 p.m.
Sub-Critical Measurements in Support of the Los Alamos Neptunium Critical Experiments, William L. Myers, Charles A. Goulding, Charles L. Hollas *(LANL)*

1:50 p.m.
Comparison of the Uncertainties of k_{eff} Using Recently Developed Covariance Data, Choong-Sup Gil *(KAERI)*, Luiz C. Leal *(ORNL)*

2:15 p.m.
Criticality Safety of Processing Salt Solution at SRS, Davoud A. Eghbali, L. Michelle Abney *(WSMS)*

2:40 p.m.
Establishing an IEZ at the K-25 Site with Realism, Kevin D. Kimball *(NISYS)*

3:05 p.m.
Impact of NDA Uncertainties on NCS at the K-25 Site, Kevin D. Kimball *(NISYS)*, Ian C. Gauld *(ORNL)*

3:30 p.m.
Benchmark Evaluation of Plutonium Hemispheres Reflected by Steel and Oil, John Darrell Bess *(Center for Space Nuclear Research)*

Monte Carlo Burnup/Transmutation–Tutorial, sponsored by RPSD; cosponsored by RPD. *Session Organizer:* Michael L. Fensin *(LANL)*. *Chair:* Russell Mosteller *(LANL)* [Track 7]

Wonder A
1:00 p.m.
The Monte Carlo Burnup/Transmutation Tutorial is a hands-on session where attendees will learn how and practice setting up and running simple Monte Carlo burnup/depletion/transmutation problems. It is designed for those who are familiar with the MCNP(X) family of Monte Carlo codes.

Those attending this session will be shown how to set up and run simple calculations. Participants contacting the organizer (jxh@lanl.gov) in advance may be able to have the code on their personal laptop. Additional laptops will be brought to the session so that small groups of participants will be able to try what is being demonstrated.

Process Monitoring and Event Detection for Enhancing Nuclear Nonproliferation, sponsored by FCWMD (in collaboration with SCNN). *Session Organizer:* Humberto E. Garcia *(INL)*. *Chair:* Humberto E. Garcia [Track 3]

Wonder B
1:00 p.m.
Design Principles for Advanced Transparency Implementation in the Next Generation of Nuclear Facilities, Carmen Méndez *(Sociotecnia Solutions)*, Virginia D. Cleary, Gary Rochau *(SNL)*

1:25 p.m.
Feasibility Testing of the IGENPRO Reactor Plant Operator Advisory System with the ANL UREX+ Facility for Diversion Detection, T. Y. C. Wei, M. C. Regalbuto, J. F. Krebs, Y. S. Park, A. S. Hebden, H. Ley *(ANL)*

1:50 p.m.
A Safeguards Performance Modeling Tool for Reprocessing, Benjamin B. Cipiti *(SNL)*, N. Lawrence Ricker *(Univ of Washington)*

2:15 p.m.
Process On-Line Monitoring Techniques Applied to Safeguards Monitoring, Wes Hines, James Henkel *(Univ of Tennessee)*

2:40 p.m.
Multi-Isotope Process (MIP) Monitor: A Near-Real-Time Monitor for Reprocessing Facilities, J. M. Schwantes, M. Douglas *(PNNL)*, C. R. Orton *(PNNL/Ohio State)*, C. Fraga *(PNNL)*, R. N. Christensen *(Ohio State)*

3:05 p.m.
Ultrahigh Resolution Spectroscopy of Nuclear Materials with Cryogenic Microcalorimeters, J. Ullom, J. Beall, W. Doriese, W. Duncan, G. Hilton, R. Horansky, K. Irwin, C. Reintsema, E. Sassi, L. Vale *(NIST)*, M. Bacrania, D. Dry, E. Hastings, A. Hoover, P. Karpius, S. Lamont, M. Rabin, J. Rim, C. Rudy, D. Vo *(LANL)*, invited

3:30 p.m.
Process Monitoring Approaches for Gas Centrifuge Enrichment Plant Safeguards, B. D. Boyer *(LANL)*, P. C. Durst *(PNNL)*, D. N. Kovacic *(ORNL)*, J. B. Morgan *(ORNL Contractor)*

Root Cause Analysis for the Fleet, the Legacy, and the Renaissance–Tutorial—II, sponsored by OPD; cosponsored by ETD, YMG. *Chair:* William R. Corcoran *(NSRC)* [Track 2]

Wonder D
1:00 p.m.
The need for the benefits of nuclear technology increases as shown by such developments as the revitalization of the commercial nuclear power reactor community, the transformation of the nuclear defense industry, advances in nuclear medicine, and the efforts to find final solutions for the nuclear legacy issues. With this renaissance of nuclear technology comes an ever-increasing corporate responsibility to be a learning organization. Root cause analysis is a fundamental tool to help an organization learn from unintended consequences of its operations. To maintain high reliability in the critical nuclear technical arena will require root cause analysis programs that get to the roots of the organizational problems leading up to the events and corrective action programs that remedy these organizational underpinnings. This panel will be an interactive tutorial on the future of root cause analysis as a tool for organizational learning. Panelists will include seasoned professionals with proven root cause analysis experience in commercial reactors, naval reactors, U.S. Department of Energy nuclear activities, and other high-hazard enterprises.

PANELISTS:
- William R. Corcoran *(NSRC)*
- Gerald A. Harvey *(EnergX, LLC)*
- Richard N. Swanson *(Performance Management Initiatives, Inc.)*
- Bruce H. Hart *(WSRC)*
- Richard S. Hartley *(B & W Pantex)*
- Richard L. Higgins *(CH2M HILL Hanford, Inc.)*
- Michael D. Quinn *(WorkPlace Cornerstone Group, LLC)*
- Willis W. (Bill) Allen *(Washington TRU Solutions, LLC)*
- Alex J. House *(Dominion Energy)*

Advanced/Gen-IV Reactor Innovations and Advancements—II, sponsored by OPD. *Chair:* Art Wharton *(Westinghouse)* [Track 8]

Magic Kingdom Ballroom 4
1:00 p.m.
Conceptual Design of QUADRISO Particles for High Temperature Reactors, Alberto Talamo *(ANL)*

1:30 p.m.
Compact, Self-Regulating Nuclear Reactor, Otis G. Peterson, Robert H. Kimpland, Don M. Coates *(LANL)*

2:00 p.m.
The Development of Ceramic High-Temperature Heat Exchangers for NGNP Applications, Merrill A. Wilson *(Ceramatec, Inc.)*

2:30 p.m.
Utilization of TRUs in VHTRs – Operation in a Single-Batch Mode: Front End, Back End, and Performance, Pavel V. Tsvetkov, Tom G. Lewis III, Ayodeji B. Alajo *(Texas A&M)*

3:00 p.m.
Reactor Physics of VHTRs with UO_2, UCO & $UC_{0.5}O_{1.5}$ Kernels Operating without Onsite Refueling, Ayodeji B. Alajo, Pavel V. Tsvetkov *(Texas A&M)*

3:30 p.m.
A First Generation Traveling Wave Reactor, Charles Ahlfeld, David McAlees, Jon McWhirter, Ashkok Odedra, Kevan Weaver, George Zimmerman, Charles Whitmer *(Intellectual Ventures)*

Neutron Activation Analysis: Status After Five Decades–Tutorial, sponsored by BMD; cosponsored by IRD. *Chair:* Rolf L. Zeisler *(NIST)* [Track 11]

Dreams D
1:00 p.m.
The intent is to provide a comprehensive discussion of the basics of the method, complementary techniques that have been derived to enhance either the sensitivity or applicability of the method, and to take a realistic look at the place activation analysis holds in today's analytical world. The tutorial aims at refreshing knowledge of professionals in the nuclear science and applications domain and providing a glance at the synergistic opportunities for young professionals and older hands alike to integrate activation analysis into today's methods and practice.

SPEAKERS:
- Rolf L. Zeisler *(NIST)*
- Richard M. Lindstrom *(NIST)*
- William D. James *(Texas A&M)*

ROOM	MONDAY, JUNE 9, 2008		TUESDAY, JUNE 10, 2008				
	2:30 – 4:00 PM	4:00 – 6:00 PM	8:00 – 10:00 AM	10:00 AM – 12:00 PM	1:00 – 2:30 PM	2:30 – 4:00 PM	4:00 – 6:00 PM
Disney South Exhibit Hall		Plenary 1: Planning for New Plant Construction	Plenary 2: Regulatory Programs & Strategies for New Reactor Licensing				Plenary 3: Nuclear Fuel Cycle Strategies and Technology Options
Disney Exhibit Hall – Room A	Near Term Issues—III			Innovative/ Evolutionary, Advanced BWRs	Near Term Issues—I	Near Term Issues—II	
Disney Exhibit Hall – Room B	HTR Concepts and Design Innovations			HTR Fuel and High Temperature Materials	Advanced Fuel Cycle Development	GFR and Other Advanced Concepts	
Disney Exhibit Hall – Room C	Reprocessing Technology (Invited Session)			Advanced Burner/ Recycling Reactors (Invited Session)	Innovative/ Advanced Power Conversion System—I	Innovative/ Advanced Power Conversion System—II	
Disney Exhibit Hall – Room D	Planetary Surface Power Strategy and Design			Structural Analysis and Design	Ground Testing and Thermionic Conversion	Concepts for Advanced Space Systems	
Disney Exhibit Hall – Room E	Major Component Upgrades, Designs for Reliability, Operational Issues and Mitigation Techniques			Digital I&C for New Reactors-I	Equipment Availability, Preventative Maintenance, Optimization and Best Practices—I	Equipment Availability, Preventative Maintenance, Optimization and Best Practices—II	
Disney Exhibit Hall – Room F	PRA and Risk Informed Decision Making: Methodology and Advances in Practice			Development in Safety Analysis Methodologies for Future Plants	LOCA & non-LOCA Plant Analysis and Methodologies—II	LOCA & non-LOCA Plant Analysis and Methodologies—I	
Disney Exhibit Hall – Room G	Sustainability: Applications			Severe Accident Phenomena - Experiment and Modeling—II	Severe Accident Phenomena - Experiment and Modeling—I	Severe Accident Phenomena - Experiment and Modeling—III	
Disney Exhibit Hall – Room H	Multinational Regulatory Cooperation			Integral and Separate Thermal Hydraulics Testing and Analysis	Best Estimate Analysis Codes and Uncertainty Methodologies—I	Best Estimate Analysis Codes and Uncertainty Methodologies—II	
Disney Exhibit Hall – Room I	System Simulation Models and Codes—II			System Simulation Models and Codes—I	New Reactor Siting Issues	International Activities on Codes and Standards for New Reactor Designs - Relationship of the Regulatory and Inspection Process to Design	
Disney Exhibit Hall – Room J	New Reactor Core Concepts and Fuel Management			Nuclear Data, Cross-section Libraries and Validation	Spent Fuel Recycling Technologies—I	Spent Fuel Recycling Technologies—II	

ROOM	WEDNESDAY, JUNE 11, 2008					THURSDAY, JUNE 12, 2008		
	8:00–10:00 AM	10:00 AM–12:00 PM	1:00–2:30 PM	2:30–4:00 PM	4:00–6:00 PM	8:00–10:00 AM	10:00 AM–12:00 PM	1:00–3:00 PM
Disney South Exhibit Hall	Plenary 4: Globalization of Nuclear Energy: Challenges and Opportunities				Plenary 5: Infrastructure Issues	Plenary 6: New Plant Deployment – Lessons Learned		
Disney Exhibit Hall – Room A		Innovative/ Evolutionary, Advanced PWRs	Materials and Structures Testing–I	Materials and Structures Testing–II			Advanced Plant Delivery - Meeting Industry Challenges—I	
Disney Exhibit Hall – Room B		Modeling and Simulation of GCRs	Regulatory Oversight of Construction	Key Licensing and Regulatory Issues for GenIII/III+ IV Reactors			Power Conversion Systems and Non-Electric Applications	Advanced Plant Delivery - Meeting Industry Challenges—II
Disney Exhibit Hall – Room C		Sodium-cooled Fast Reactors (SFR)—I	Sodium-cooled Fast Reactors (SFR): The French Program	Sodium-cooled Fast Reactors (SFR)—II			Sodium-cooled Fast Reactors (SFR): The Japanese Program	Molten- and Liquid-salt-cooled Reactors
Disney Exhibit Hall – Room D		Upgrading the Research Reactor Capabilities for Advanced Technology Development	Supercritical Water-cooled Reactor (SCWR)—I	Supercritical Water-cooled Reactor (SCWR)—II			Lead-cooled Fast Reactors (LFR)—I	Lead-cooled Fast Reactors (LFR)—II
Disney Exhibit Hall – Room E		Digital I&C for New Reactors—II	A Development in Life Extension Issues and Advances in Regulatory Safety Assessment—I	A Development in Life Extension Issues and Advances in Regulatory Safety Assessment—II			Hydrogen Production	
Disney Exhibit Hall – Room F		Development in Severe Accident Analysis, Codes and Management—I	Development in Severe Accident Analysis, Codes and Management—II	Development in Severe Accident Analysis, Codes and Management—III			Reactor Physics Analyses and Applications	
Disney Exhibit Hall – Room G		Sustainability: International	Reactor Physics Methods, Codes and Validation				Regulatory Oversight of Component Manufacturing	Regulatory Program and Strategies for New Reactor Licensing
Disney Exhibit Hall – Room H		CFD Applications to Water, Liquid Metal and Gas Reactors—I	CFD Applications to Water, Liquid Metal and Gas Reactors—II	CFD Applications to Water, Liquid Metal and Gas Reactors—III			Thermal Hydraulics Measurement and Modeling Fundamentals-I	Thermal Hydraulics Measurement and Modeling Fundamentals-II
Disney Exhibit Hall – Room I		Advances in Two-Phase Flow and Heat Transfer–I	Advances in Two-Phase Flow and Heat Transfer–II	Advances in Two-Phase Flow and Heat Transfer–III			Thermal Hydraulics of Gas-Cooled Reactor Systems	Advanced Reactor Testing and Analysis
Disney Exhibit Hall – Room J		Materials Issues for Next Generation NPP: Environment	Strategies for Advanced Fuel Cycles	Advanced Fuel Cycles, Recycling, and Actinide Transmutation			Materials Issues for Next Generation NPP: Structural Mechanics	
Magic Kingdom Ballroom 1							Planning, Cost Estimation and Construction of Nuclear Power Plants–Tutorial (1:00 PM – 6:00 PM)	

HONORARY CHAIR:
Charles Pardee
Exelon Nuclear-USA

HONORARY CHAIR:
Philippe Pradel
CEA-France

HONORARY CHAIR:
Takuya Hattori
JAIF-Japan

HONORARY CHAIR:
Nam Zin Cho
KNS-Korea

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Amir Shahkarami
Exelon Nuclear-USA

GENERAL CHAIR:
Jean Claude Gauthier
AREVA-France

GENERAL CHAIR:
Akio Tsuji
Hitachi-Japan

GENERAL CHAIR:
Myung-Jae Song
KHNP-Korea

TECHNICAL PROGRAM CHAIR:
Thomas F. Marcille
LANL-USA

TECHNICAL PROGRAM CHAIR:
Bernard Bonin
CEA-France

TECHNICAL PROGRAM CHAIR:
Tsutomu Yanagisawa
JAEA-Japan

TECHNICAL PROGRAM CHAIR:
Kune Y. Suh
Seoul National University-Korea

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University of Florida-USA

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STEERING COMMITTEE:
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Westinghouse-USA

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SFEN-France

STEERING COMMITTEE:
Kumiaki Moriya
Hitachi-Japan

STEERING COMMITTEE:
Young Suk Hur
KOPEC-Korea

MONDAY • JUNE 9, 2008

7:30 AM – 5:00 PM	**MEETING REGISTRATION**
8:00 AM – 10:00 AM	**SPOUSE/GUEST HOSPITALITY**
8:30 AM – 11:30 AM	**2008 ANS ANNUAL MEETING: OPENING PLENARY** "Nuclear Science and Technology: Now Arriving on Main Street"
10:00 AM – 3:00 PM	**SPOUSE/GUEST TOUR** "San Juan Mission Tour and Shopping in Old Town"
11:30 AM – 1:00 PM	**OPERATIONS AND POWER DIVISION LUNCHEON**
1:00 PM – 2:30 PM	**2008 ANS ANNUAL MEETING:** **ANS PRESIDENT'S SPECIAL SESSION** "Getting the Word Out"
2:30 PM – 4:00 PM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** (see page 16)
2:30 PM – 4:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING:** **TECHNICAL SESSIONS** • Near Term Issues—III • HTR Concepts and Design Innovations • Reprocessing Technology • Planetary Surface Power Strategy and Design • Major Component Upgrades, Designs for Reliability, Operational Issues and Mitigation Techniques • PRA and Risk Informed Decision Making: Methodology and Advances in Practice • Sustainability: Applications • Multinational Regulatory Cooperation • System Simulation Models and Codes–II • New Reactor Core Concepts and Fuel Management
2:30 PM – 4:00 PM	**NFSM EMBEDDED TOPICAL MEETING:** **OPENING PLENARY SESSION** (see page 63)
3:00 PM – 5:00 PM	**ISOTOPES EMBEDDED TOPICAL MEETING:** **OPENING PLENARY SESSION** (see page 59)
4:00 PM – 5:00 PM	**ANS BUSINESS MEETING**
4:00 PM – 6:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING:** **PLENARY SESSION #1:** "Planning for New Plant Construction"
6:45 PM – 10:00 PM	**EVENING EVENT:** "Rat Pack Party–An Evening with the Kings of Cool"

MONDAY, JUNE 9, 2008 • 2:30 P.M. - 4:00 P.M.

Near Term Issues-III, *Session Chair:* Jeffrey F. Hamel *(EPRI-USA)*

Disney Exhibit Hall Room A

2:30 p.m.
Near-Term Deployment of Advanced Light Water Reactors, Jeffrey F. Hamel *(EPRI-USA)*

2:50 p.m.
How an EAM Solution Could Support a New Build Project?, Eric Luanco *(VENTYX-USA)*

3:10 p.m.
Design of Integrated Managing System for NPP Safety Based on CIMS and Fractal Modeling Method, Feng-yu Li, Xin-ye Wang, Ying Liu *(Naval Univ of Engineering-China)*

HTR Concepts and Design Innovations, *Session Chair:* Pavel Tsvetkov *(Texas A&M Univ-USA)*

Disney Exhibit Hall Room B

2:30 p.m.
Why HTR/VHTR? A European Point of View, V. Basini *(CEA Cadarache-France)*, E. Bogusch *(AREVA NP-Germany)*, E. Breuil *(AREVA NP-France)*, D. Buckthorpe *(AMEC-UK)*, V. Chauvet *(LGI-France)*, M. Fütterer *(JRC-IE-Netherlands)*, A. van Heek *(NRG-Netherlands)*, D. Hittner *(AREVA NP-France)*, W. von Lensa *(FZJ-Germany)*, J. Pirson *(Suez Tractebel-Belgium)*, D. Verrier *(AREVA NP-France)*

2:50 p.m.
Design, Analysis and Development for the Modular PB-AHTR, Philippe Bardet, Edward Blandford, Massimiliano Fratoni, Aurelie Niquille, Ehud Greenspan, Per F. Peterson *(Univ of California, Berkeley-USA)*

3:10 p.m.
Using Helicoids to Eliminate 'Hot Streaking' and Stratification in the Very High Temperature Reactor Lower Plenum, Sal B. Rodriguez *(Sandia National Laboratory, Univ of New Mexico-USA)*, Mohamed S. El-Genk *(Univ of New Mexico-USA)*

3:30 p.m.
Risk Minimization for Near-Term Deployment of the Next Generation Nuclear Plant, Lew Lommers, Finis Southworth, Bernard Riou, Michel Lecomte *(AREVA-USA)*

3:50 p.m.
Neutronic Performance of High Molecular Weight Coolants for a Prismatic VHTR, Timothy M. Schriener , Mohamed El-Genk *(Univ of New Mexico-USA)*

Reprocessing Technology (Invited Session), *Session Chairs:* Pradip Saha, Eric Loewen *(GE Hitachi Nuclear Energy-USA)*

Disney Exhibit Hall Room C

2:30 p.m.
Aqueous Processing Technologies for the Treatment of Spent Nuclear Fuel, James J. Laidler *(Argonne National Laboratory-USA)*

2:50 p.m.
The Electrochemical Fuel Cycle for Treatment of Fast Reactor Fuel, K. M. Goff, M. F. Simpson, T. J. Battisti *(INL-USA)*

3:10 p.m.
Pyroprocessing Technologies for the Treatment of LWR Spent Fuel, S.W. Park *(KAERI-Korea)*

3:30 p.m.
French-Japan Fuel Cycle and SFR Development Program in the Context of GNEP, Dorothy Davidson, Kim Stein, Remi Bera, Paul Murray *(AREVA Federal Services LLC-USA)*, Stefano Ratti *(AREVA NC-USA)*, Jean-Pol Serpantie *(AREVA NP-France)*, Richard Vinoche *(AREVA NC-France)*, Shigeru Kunishima, Makoto Mito *(Mitsubishi Heavy Industries-Japan)*, Shinya Toiguchi *(MNES-USA)*, Toshiyuki Zama *(Japan Nuclear Fuel-Japan)*

Planetary Surface Power Strategy and Design, *Session Chair:* Shannon Bragg-Sitton *(Texas A&M Univ-USA)*

Disney Exhibit Hall Room D
2:30 p.m.
Compact, Readily Deployable Reactor Systems for Secure Power for Civilian and Defense Applications, James R. Powell, J. Paul Farrell *(Brookhaven Technology Group, Inc.-USA)*

2:50 p.m.
A Basic LEGO Reactor Design for the Provision of Lunar Surface Power, John Darrell Bess *(Center for Space Nuclear Research-USA)*

3:10 p.m.
Modeling and Analysis of a Lunar Space Reactor with the Computer Code RELAP5-3D/ATHENA, Juan J. Carbajo, Louis Qualls *(ORNL-USA)*

3:30 p.m.
Modifications of the Fission Surface Power Primary Test Circuit *(FSP-PTC)*, Anne Garber *(NASA MSFC-USA)*

Major Component Upgrades, Designs for Reliability, Operational Issues and Mitigation Techniques, *Session Chair:* Seth A. Swamy *(Westinghouse-USA)*

Disney Exhibit Hall Room E
2:30 p.m.
SG Asset Management Model Application, Mike G. Pop, Paul Shoemaker, Kent Colgan, John Griffith *(AREVA NP-USA)*

2:50 p.m.
An Experience in Low Temperature Stress Corrosion Cracking at Steam Generator Coldleg Drain Nozzle for YGN 3 Unit, Sim Kyo Lee, Seon Hak Lee *(KHNP-Korea)*

3:10 p.m.
Fatigue Crack Growth Impact on Leak-Before-Break Due to Mechanical Stress Improvement Process, S.F. Hankinson, T.J. Pournaras, T.F. Wiley, J.A. Smouse, C.K. Ng, D. Bhowmick, S.A. Swamy *(Westinghouse-USA)*

3:30 p.m.
Effect of Structural Weld Overlay on Recommended Leak-Before-Break Margins, Dulal Bhowmick, Seth Swamy, Anees Udyawar *(Westinghouse-USA)*

PRA and Risk Informed Decision Making: Methodology and Advances in Practice, *Session Chair:* Amy Slaga *(AREVA NP-USA)*

Disney Exhibit Hall Room F
2:30 p.m.
Treatment of Complementary Events in Event Trees in Constructing Linked Fault Trees for Level 1 and Level 2 PRA, Young G. Jo *(Southern Nuclear Operating Company-USA)*

2:50 p.m.
Spatial Interactions Database Development for Effective Probabilistic Risk Assessment, James K. Liming *(ABSG Consulting Inc.-USA)*, Roland F. Dunn *(STP Nuclear Operating Company-USA)*

3:10 p.m.
SIMPROC: Procedures Simulator for Operator Actions in NPPs, J. Gil, J. Esperón, L. Gamo, I. Fernández, P. González, J. Moreno *(Indizen Technologies-Spain)*, C. Queral, A. Expósito, G. Jiménez *(Technical Univ of Madrid-Spain)*, J. Hortal *(Spanish Nuclear Regulatory Commission-Spain)*

3:30 p.m.
A Study on Uncertainties Evaluation in Containment Event Tree, Hirotaka Sugiyama *(TEPCO-Japan)*, Ryoichi Hamazaki *(Toshiba-Japan)*, Tomoyuki Matsumoto *(Hitachi-GE Nuclear Energy-Japan)*, Naoki Hirokawa *(TEPCO Systems Corp-Japan)*

Sustainability: Applications, *Session Chair:* Ken Schultz *(General Atomics-USA)*

Disney Exhibit Hall Room G
2:30 p.m.
Risks and Benefits of Nuclear Energy in a Sustainable Development Perspective, Evelyne Bertel *(OECD/NEA-France)*

2:50 p.m.
The Norwegian Thorium Initiative, Øystein Asphjell, Bård Sæthre, Julian Kelly *(Thor Energy AS-Norway)*

3:10 p.m.
High-Temperature Reactors for Underground Liquid Fuels Production with Direct Carbon Sequestration, C.W. Forsberg *(MIT, ORNL-USA)*

3:30 p.m.
Novel Reactor Designs to Burn Non-Fissile Fuels, J. Gilleland, Charles Ahlfeld, Dimitri Dadiomov, Rod Hyde, Yuki Ishikawa, David McAlees, Jon McWhirter, Nathan Myhrvold, John Nuckolls, Ashok Odedra, Kevan Weaver, Charles Whitmer, Lowell Wood, George Zimmerman *(Intellectual Ventures-USA)*

Multinational Regulatory Cooperation, *Session Chair:* Gary Holahan *(USNRC-USA)*

Disney Exhibit Hall Room H
2:30 p.m.
U.S. Experience with Multinational Regulatory Cooperation, Gary Holahan *(USNRC-USA)*

2:50 p.m.
Multinational Design Evaluation Program, Alejandro Huerta *(OECD-NEA-France)*

3:10 p.m.
IAEA Activities, Mamdouh El-Shanawany *(IAEA)*

3:30 p.m.
French Experience with Regulatory Cooperation, Guillame Wack *(ASN-France)*

System Simulation Models and Codes-II, *Session Chair:* Shripad Revankar *(Purdue Univ-USA)*

Disney Exhibit Hall Room I

2:30 p.m.
Testing Programs Related to Potential Adverse Flow Effects In Nuclear Power Plants, Jai Rajan, Andre Turlin, Patrick Sekerak, Thomas Scarbrough *(US NRC-USA)*

2:50 p.m.
The TRAB-SMABRE for 3D Plant Transient and Accident Analyses, Jaakko Miettinen, Hanna Raty, Antti Daavittila *(VTT-Finland)*

3:10 p.m.
Analysis of Beyond Design Basis Accidents in Spent Fuel Pools of the Ignalina NPP, A. Kaliatka, V. Ognerubov, M. Vaisnoras, E. Uspuras *(Lithuanian Energy Institute-Lithuania)*, K. Trambauer *(Gesellschaft fur Anlagen und Reaktorsicherheit (GRS) mbH -Germany)*

New Reactor Core Concepts and Fuel Management, *Session Chair:* Bojan Petrovic *(Georgia Institute of Technology-USA)*

Disney Exhibit Hall Room J
2:30 p.m.
Checkmate - A New Concept in Core Design, Magnus Kruners *(Studsvik Scandpower AB-Sweden)*, Emilio Fuentes *(FPL Energy-USA)*

2:50 p.m.
A Minimum Shuffle Core Design Strategy for ESBWR, Atul A. Karve, Russ M. Fawcett *(GEH/Global Nuclear Fuel-USA)*

3:10 p.m.
Neutronic Study for Introduction of Erbium as a Burnable Poison into the Fuel Cladding Tube to Enable PWR Core Control, C. Chabert, J.C. Brachet, S. Olier *(CEA Cadarache-France)*

3:30 p.m.
Modification of the Japanese First Nuclear Ship for a Regional Energy Supply System, Kotaro Sato, Yoichiro Shimazu, Tadashi Narabayashi, Masashi Tsuji *(Hokkaido Univ-Japan)*

MONDAY, JUNE 9, 2008 • 4:00 P.M. - 6:00 P.M.

ICAPP '08 Plenary 1: Planning for New Plant Construction, *Session Chairs:* Amir Shahkarami *(Exelon-USA, Senior VP)*, Takuya Hattori *(JAIF-Japan)*

Disney South Exhibit Hall
SPEAKERS:
- Reactor Design Technology Selection and Decision Making Process, Amir Shahkarami *(Exelon-USA, Senior VP)*
- Material Availability and Infrastructure Challenges, Ed Cummins *(Westinghouse-USA, VP, Regulatory Affairs and Standardization)*
- Project Management Strategy, Lee Woo Bang *(KHNP-Korea, Senior VP, New Plant Construction)*
- GEH Construction Approach, John Higgins *(GE-Hitachi Nuclear Energy-USA, VP, Nuclear Plant Projects)*
- The Global Infrastructure and Supply Chain, William A. Fox, III *(AREVA NP-USA, Vice President)*

TUESDAY • JUNE 10, 2008

7:30 AM – 5:00 PM	**MEETING REGISTRATION**
8:00 AM – 10:00 AM	**SPOUSE/GUEST HOSPITALITY**
8:00 AM – 10:00 AM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #2:** "Regulatory Programs and Strategies for New Reactor Licensing"
8:30 AM – 11:30 AM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** (see page 18)
8:30 AM – 11:30 AM	**ISOTOPES EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 59)
8:30 AM – 11:30 AM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
10:00 AM – 12:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** • Innovative/Evolutionary, Advanced BWRs • HTR Fuel and High Temperature Materials • Advanced Burner/Recycling Reactors • Structural Analysis and Design • Digital I&C for New Reactors—I • Development in Safety Analysis Methodologies for Future Plants • Severe Accident Phenomena–Experiment and Modeling—II • Integral and Separate Thermal Hydraulics Testing and Analysis • System Simulation Models and Codes—I • Nuclear Data, Cross-section Libraries and Validation
10:00 AM – 3:00 PM	**SPOUSE/GUEST TOUR** "The J. Paul Getty Museum"
11:30 AM – 1:00 PM	**ANS HONORS AND AWARDS LUNCHEON**
1:00 PM – 4:00 PM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** (see page 18)
1:00 PM – 2:30 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** • Near Term Issues—I • Advanced Fuel Cycle Development • Innovative/Advanced Power Conversion Systems—I • Ground Testing and Thermionic Conversion • Equipment Availability, Preventive Maintenance, Optimization and Best Practices—I • LOCA and non-LOCA Plant Analysis and Methodologies—II • Severe Accident Phenomena–Experiment and Modeling—I • Best Estimate Analysis Codes and Uncertainty Methodologies—I • New Reactor Siting Issues • Spent Fuel Recycling Technologies—I
1:00 PM – 4:00 PM	**ISOTOPES EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 59)
1:00 PM – 5:00 PM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
2:30 PM – 4:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** • Near Term Issues—II • GFR and Other Advanced Concepts • Innovative/Advanced Power Conversion Systems—II • Concepts for Advanced Space Systems • Equipment Availability, Preventive Maintenance, Optimization and Best Practices—II • LOCA & non-LOCA Plant Analysis and Methodologies—I • Severe Accident Phenomena–Experiment and Modeling—III • Best Estimate Analysis Codes and Uncertainty Methodologies–II • International Activities on Codes and Standards for New Reactor Designs–Relationship of the Regulatory and Inspection Process to Design • Spent Fuel Recycling Technologies—II
4:00 PM – 6:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #3:** "Nuclear Fuel Cycle Strategies and Technology Options"

TUESDAY, JUNE 10, 2008 • 8:00 A.M. - 10:00 A.M.

ICAPP '08 Plenary 2: Regulatory Programs and Strategies for New Reactor Licensing, *Session Chairs:* Samim Anghaie *(Univ of Florida-USA)*, Myung-Jae Song *(KHNP-Korea)*

Disney South Exhibit Hall

SPEAKERS:

- Gary Holahan *(NRO/NRC-USA)*
- Jong-In Lee *(KNS-Korea)*
- Kenichi Arai *(MEHI-Japan)*
- Dave Watson *(UK)*

TUESDAY, JUNE 10, 2008 • 10:00 A.M. - 12:00 P.M.

Innovative/Evolutionary, Advanced BWRs, *Session Chairs:* MD Alamgir *(GE-Hitachi Nuclear Energy-USA)*, Hideaki Heki *(Toshiba-Japan)*

Disney Exhibit Hall Room A

10:00 a.m.
The Safety Concept of the SWR 1000 with Active and Passive Safety Systems, Doris Pasler *(AREVA NP-Germany)*

10:20 a.m.
SWR 1000: Efficient Design for Operational Excellence, Werner Brettschuh *(AREVA NP GmbH-Germany)*

10:40 a.m.
ESBWR Power Maneuvering via Feedwater Temperature Control, Pradip Saha, Wayne Marquino, Larry J. Tucker *(GE Hitachi Nuclear Energy-USA)*

11:00 a.m.
Role of Human Factors in System Safety, Denise Brooks, Curt Robert, Thomas Graham *(GE-Hitachi Nuclear Energy-USA)*

11:20 a.m.
Coupled Regional Stability Analysis of Natural Circulation BWRs, Rui Hu, Mujid S. Kazimi *(MIT-USA)*

11:40 a.m.
SWR 1000 Integral and Full Scale Tests of the Passive Safety Systems, Stephan Leyer, Michael Wich, Heinrich Schäfer *(AREVA NP-Germany)*

HTR Fuel and High Temperature Materials, *Session Chair:* Paul Demkowicz *(INL-USA)*

Disney Exhibit Hall Room B

10:00 a.m.
Means, Methods and Performances of the AREVA's HTR Compact Controls, J. Banchet *(AREVA, Intercontrôle-France)*, P. Guillermier *(AREVA NP-France)*, D. Tisseur *(AREVA, Intercontrôle-France)*, M.P. Vitali *(AREVA, CERCA-France)*

10:20 a.m.
Developments and Economical Aspects in the Fabrication of HTR Fuel Elements, Karl Froschauer, Georg Brähler, Werner Heit *(NUKEM Technologies GmbH-Germany)*

10:40 a.m.
Development of a Fission Product Release Analysis Code COPA-FPREL, Y.M. Kim, M.S. Cho, Y.W. Lee, W.J. Lee *(KAERI-Korea)*

11:00 a.m.
Review of Material Properties of Pyrolytic Carbon Coating Layers in Relation with QC Measurement in HTR Coated Particle Fuels, Young-Woo Lee, Young Min Kim, Woong Ki Kim, Won Ju Kim, Ji Yeon Park, Moon Sung Cho *(KAERI-Korea)*

11:20 a.m.
Alloy 617 for the High Temperature Diffusion-Bonded Compact Heat Exchangers, Xiuqing Li, David Kininmont, Renaud Le Pierres, Stephen John Dewson *(Heatric-UK)*

Advanced Burner/Recycling Reactors (Invited Session), *Session Chairs:* Mario D. Carelli *(Westinghouse-USA)*, Pradip Saha *(GE Hitachi Nuclear Energy-USA)*

Disney Exhibit Hall Room C

10:00 a.m.
Sodium Fast Reactors (SFRs) and Recyclers, Salomon Levy *(Consultant-USA)*

10:20 a.m.
Near-term Deployment of the PRISM Sodium-cooled Fast Reactor, Eric P. Loewen *(GE Hitachi Nuclear Energy-USA)*

10:40 a.m.
Approach for FBR Commercialization in Japan, Keizo Ogata *(Mitsubishi FBR Systems-Japan)*

11:00 a.m.
French Sodium Fast Reactor Program, J. Rouault *(CEA-France)*, J.P. Serpantié *(AREVA NP-France)*

11:20 a.m.
An Innovative Design Approach to a Cost Effective Commercial Liquid Metal Reactor, M.D. Carelli, H.D. Garkisch, R. Hundal *(Westinghouse-USA)*, K. Arie, H. Handa, H. Ota, S. Matsuyama *(Toshiba-Japan)*, N. Todreas, P. Hejzlar, P. Wells *(MIT-USA)*, T. St. Louis *(Shaw-USA)*

Structural Analysis and Design, *Session Chairs:* Françoise Touboul *(CEA-France)*, Ram Srinivasan *(Energy Solutions-USA)*

Disney Exhibit Hall Room D

10:00 a.m.
New Nuclear Power Plants in Europe - Design Aspects for Constructural Engineering, Rüdiger Meiswinkel *(E.ON Kernkrafi-Germany)*, Franz-Hermann Schlüter *(SMP Ingenieure im Bauwesen-Germany)*

10:20 a.m.
Multiscale Modeling Approach to Stress Corrosion Cracking, Ismail Tirtom, Nishith Kumar Das, Ken Suzuki, Kazuhiro Ogawa, Tetsuo Shoji *(Tohoku Univ-Japan)*

10:40 a.m.
Influence of Non Linear Geometrical Parameter on Curved Thin Shell Buckling Behaviour, R. Lo Frano, G. Forasassi *(Univ of Pisa-Italy)*

11:00 a.m.
Missile Impact on Reinforced Concrete Slabs: Three Dimensional Dynamic Finite Element Analysis, Y.F. Al-Obaid *(Faculty of Technological Studies, PAEET-Kuwait)*

Digital I&C for New Reactors-I, *Session Chair:* Edward Quinn *(GE-Hitachi Nuclear Energy-USA)*

Disney Exhibit Hall Room E
10:00 a.m.
Instrumentation and Control and Human Machine Interface Science and Technology Roadmap in Support of Advanced Reactors and Fuel Programs in the U.S., Don W. Miller *(The Ohio State Univ-USA)*, Steven A. Arndt *(US NRC-USA)*, Donald Dudenhoeffer, Bruce Hallbert *(INL-USA)*, Leonard J. Bond *(PNNL-USA)*, David E. Holcomb, Richard T. Wood *(ORNL-USA)*, Joseph A. Naser *(EPRI-USA)*, John O'Hara *(BNL-USA)*, Edward (Ted) L. Quinn *(GE Hitachi Nuclear Energy-USA)*

10:20 a.m.
A Novel Approach to Modeling Single Event Upsets in Digital Microelectronic Devices, S.M. Cetiner, C. Celik, K. Ünlü, V. Narayanan, M. J. Irwin, Y. Xie *(Pennsylvania State Univ-USA)*

10:40 a.m.
Licensing of Simple Digital Devices, Terry W. Jackson *(US NRC-USA)*

11:00 a.m.
Switching Scheme of Data Communication Network for Safety System in Nuclear Power Plant, Je-Yun Park, Jong-Yong Keum, In-Soo Koo *(KAERI-Korea)*

11:20 a.m.
An Advanced Plant Protection System for the Shin-Kori 3&4 Nuclear Power Plant, Yong Hak Kim, Jong Soo Kwon *(KHNP-Korea)*, Woong Seock Choi *(KOPEC-Korea)*, C. Frank Ridolfo, Stephen Wilkosz *(Westinghouse-USA)*

Development in Safety Analysis Methodologies for Future Plants, *Session Chairs:* Sandra Sloan *(AREVA NP-USA)*, Sama Bilbao y Leon *(IAEA)*

Disney Exhibit Hall Room F
10:00 a.m.
The Comparison of Frequency-Consequence (F-C) Criteria in Evaluating the Risk of New or Existing Reactor, Oh Kju Myeng, Sang-Kyu Ahn, Won-Hyo Yoon, Hoon-Joo Lee *(KINS-Korea)*

10:20 a.m.
Overview of the Activities of the OECD/NEA/NSC Working Party on Nuclear Criticality Safety, Y. Rugama *(OECD/NEA)*, R. Blomquist *(ANL-USA)*, M. Brady Raap *(PNNL-USA)*, B. Briggs *(INL-USA)*, J. Gulliford *(NEXIA-UK)*, Y. Miyoshi, K. Suyama *(JAEA-Japan)*

10:40 a.m.
Drafting and Implementation of a "Practical Elimination" Approach for Gen IV Nuclear Reactors, Ch. Clement, B. Maliverney, D. Mulet-Marquis, J.F. Sauvage *(EDF-France)*, B. Guesdon, B. Carluec, S. Ehster *(AREVA NP-France)*, D. Grenèche *(AREVA NC-France)*, P. Anzieu, G.L. Fiorini *(CEA-France)*, M. Rozenholc, F. Vitton *(Consultant-France)*

11:00 a.m.
EFIT Reactor Simulation Coupling Neutronics/Thermal-hydraulics with the RELAP5/PARCS Code, Paride Meloni, Giacomino Bandini, Massimiliano Polidori *(ENEA-Italy)*

11:20 a.m.
Comparative Review of Design and Improved Safety Features of New LWR Plants, Alejandro Chomat, Samim Anghaie *(Univ of Florida-USA)*

Severe Accident Phenomena – Experiment and Modeling-II, *Session Chair:* Joy L. Rempe *(Idaho National Laboratory-USA)*

Disney Exhibit Hall Room G
10:00 a.m.
Towards a Comprehensive Interpretation of 2D MCCI Tests, J.M. Seiler, B. Tourniaire *(CEA-France)*

10:20 a.m.
Measurements of the Mechanical Strength of Corium Crusts, S. Lomperski, M.T. Farmer *(ANL-USA)*

10:40 a.m.
Differences between Silica and Limestone Concretes that may Affect their Interaction with Corium, Christophe Journeau, Jean-François Haquet, Pascal Piluso, Jean-Michel Bonnet *(CEA Cadarache-France)*

11:00 a.m.
Current European Experiments on 2D Molten Core Concrete Interactions: HECLA and VULCANO, Christophe Journeau, Jean Michel Bonnet, Eric Boccaccio, Pascal Piluso *(CEA-France)*, Tuomo Sevón, Pekka H. Pankakoski, Stefan Holmström, Jouko Virta *(VTT-Finland)*

11:20 a.m.
Interpretation of Real Material 2D MCCI Experiments in Homogeneous Oxidic Pool with the ASTEC/MEDICIS Code, M. Cranga, C. Mun, B. Michel, F. Duval, M. Barrachin *(IRSN-France)*

Integral and Separate Thermal Hydraulics Testing and Analysis, *Session Chair:* Nusret Aksan *(PSI-Switzerland)*

Disney Exhibit Hall Room H
10:00 a.m.
An Improved Horizontal Flow Regime Map for the 1-D Module of WCOBRA/TRAC-TF2, Cesare Frepoli, Jun Liao, Katsuhiro Ohkawa *(Westinghouse-USA)*

10:20 a.m.
Full-size and Scaled 3-loop Reactor Vessel Simulation for Boron Dilution Studies Using CFD, T.V. Dury, M.T. Dhotre *(PSI-Switzerland)*

10:40 a.m.
MELCOR Validation against a PUMA Facility Main Steam Line Break Integral Test, Y. Liao *(PSI-Switzerland)*, K. Vierow *(Texas A&M Univ-USA)*, J.T. Han *(US NRC-USA)*

11:00 a.m.
An Integral Effect Test on the Reflood Period of a Large-Break LOCA for APR1400 Using the ATLAS, H.S. Park, K.Y. Choi, S. Cho, K.H. Kang, N.H. Choi, D.J. Euh, Y.S. Kim, W.P. Baek *(KAERI-Korea)*

System Simulation Models and Codes-I, *Session Chair:* Shripad Revankar *(Purdue Univ-USA)*

Disney Exhibit Hall Room I
10:00 a.m.
Experimental Validation of a Core Heat Transfer Model in the TASS/SMR Code Using Film Boiling Data, Seong Wook Lee, Soo Hyung Kim, Young Jong Chung *(KAERI-Korea)*

10:20 a.m.
PC-based Simulator PCTRAN for Advanced Nuclear Power Plants, Li-chi Cliff *(Micro-Simulation Technology-USA)*

10:40 a.m.
Analysis of Dynamic Behavior of MEGAPIE Cooling System, X. Cheng, A. Class *(FZK/IKET-Germany)*

11:00 a.m.
Development of Evaluation System of Safety Margin Effects for Degradation of CANDU Reactors Using RELAP-CANDU, Yong Won Choi, Jun Soo Yoo, Un Chul Lee *(Seoul National Univ-Korea)*, Manwoong Kim, Sang-Kyu Lee *(KINS-Korea)*

Nuclear Data, Cross-section Libraries and Validation, *Session Chair:* Jae-Man Noh *(KAERI-Korea)*

Disney Exhibit Hall Room J
10:00 a.m.
ZPPR-21 Critical Benchmark Analyses with ENDF/B-V and -VII Data, Changho Lee, Sang Ji Kim, Won Sik Yang *(ANL-USA)*

10:20 a.m.
An Application Method of Benchmark Experiment Results to Small Innovative Fast Reactor Designs, Yasushi Tsuboi, Yasuyuki Moriki *(Toshiba-Japan)*, Masatoshi Kawashima *(Aitel Corporation-Japan)*

10:40 a.m.
Development of a Test Suite for Nuclear Data Verification and Validation of Nuclear Data, Brian S. Triplett, Samim Anghaie *(Univ of Florida-USA)*, Morgan C. White *(LANL-USA)*

11:00 a.m.
Identification of the Doppler Reactivity Coefficient from a Low Power Transient Observed in a Zero-Power Reactor Physics Test of PWRs, Masashi Tsuji, Yoichiro Shimazu, Tadashi Narabayashi *(Hokkaido Unv-Japan)*, Yasushi Hanayama, Yasunori Ohoka, Masatoshi Yamasaki *(Nuclear Fuel Industries-Japan)*

11:20 a.m.
Improvement of Prediction Accuracy for Fuel Fabrication System with Erbia Bearing Fuel, Toshikazu Takeda, Tadafumi Sano *(Osaka Univ-Japan)*, Takeshi Kuroishi, Masatoshi Yamasaki *(Nuclear Fuel Industries Ltd.-Japan)*, Hironobu Unesaki *(Kyoto Univ-Japan)*

TUESDAY, JUNE 10, 2008 • 1:00 P.M. - 2:30 P.M.

Near Term Issues-I, *Session Chair:* Jeffrey F. Hamel *(EPRI-USA)*

Disney Exhibit Hall Room A
1:00 p.m.
Integration of New Nuclear Plants into the Grid, Part I: Transmission System Issues, Nick Abi-Samra *(EPRI-USA)*

1:20 p.m.
Integration of New Nuclear Power Plants into Transmission Grids, Part II: Zones of Vulnerabilities (ZoV), Nick Abi-Samra *(EPRI-USA)*

1:40 p.m.
Advanced Cooling Technologies, John S. Maulbetsch *(Maulbetsch Consulting-USA)*

2:00 p.m.
Application of Hybrid Cooling Technology for North Anna Unit 3, John D. Waddill *(Dominion Resources-USA)*, Douglas A. Kemp *(Bechtel Power Corp-USA)*

Advanced Fuel Cycle Development, *Session Chair:* Matt Richards *(General Atomics-USA)*

Disney Exhibit Hall Room B
1:00 p.m.
An Optimal Loading Principle of Burnable Poisons for an OTTO Refueling Scheme in Pebble Bed HTGR Cores, Hoai Nam Tran, Yasuyoshi Kato *(Tokyo Institute of Technology-Japan)*

1:20 p.m.
Out-of-Core Fuel Cycle Characteristics of VHTRs with No On-Site Refueling, Pavel V. Tsvetkov, Ayodeji B. Alajo, Tom G. Lewis III, David E. Ames II *(Texas A&M Univ-USA)*

1:40 p.m.
Deployment of FBR/VHTR Systems for Japan's Future Energy Demands, Matt Richards *(General Atomics-USA)*, Kazuhiko Kunitomi *(JAEA-Japan)*

Innovative/Advanced Power Conversion System-I, *Session Chair:* Pavel Hejzlar *(MIT-USA)*

Disney Exhibit Hall Room C
1:00 p.m.
Initial Status and Test Results from a Supercritical CO2 Brayton Cycle Test Loop, Steven A. Wright *(Sandia-USA)*, Robert Fuller, Paul S. Pickard, Milton E. Vernon *(Barber Nichols-USA)*

1:20 p.m.
Design of Small Centrifugal Compressor Test Model for a Supercritical CO2 Compressor in the Fast Reactor Power Plant, Yasushi Muto, Takao Ishizuka, Masanori Aritomi *(Tokyo Institute of Technology-Japan)*

1:40 p.m.
Dynamic Modeling of the S-CO2 Recompression Cycle, N.A. Carstens *(MIT-USA)*, R.B. Vilim *(ANL-USA)*, P. Hejzlar, M.J. Driscoll *(MIT-USA)*

2:00 p.m.
Controllability of the Supercritical Carbon Dioxide Brayton Cycle near the Critical Point, Anton Moisseytsev, James J. Sienicki *(ANL-USA)*

Ground Testing and Thermionic Conversion, *Session Chair:* Norbert Frischauf *(QASAR Technologie(s)-The Netherlands)*

Disney Exhibit Hall Room D
1:00 p.m.
General Purpose Heat Source Simulator, William J. Emrich, Jr. *(NASA MSFC-USA)*

1:20 p.m.
NaK Plugging Meter Design for the Feasibility Test Loops, J. Boise Pearson, Thomas Godfroy *(NASA MSFC-USA)*, Robert S. Reid *(LANL-USA)*, Kurt A. Polzin *(NASA MSFC-USA)*

1:40 p.m.
Concept of Direct Energy Conversion Nuclear Cogeneration Plant, V.I. Yarygin, G.E. Lazarenko, V.S. Mironov, A.P. Pyshko, M.K. Ovcharenko, A.D. Krotov, V.A. Linnik, A.S. Mikheyev, A.V. Sonko, D.G. Lazarenko *(SSC RF-IPPE-Russia)*

Equipment Availability, Preventive Maintenance, Optimization and Best Practices-I, *Session Chair:* Ken Ferguson *(Ivara-Canada)*

Disney Exhibit Hall Room E
1:00 p.m.
Technology Success: Integration of Power Plant Reliability and Effective Maintenance, Kenneth Ferguson *(Ivara-Canada)*

1:20 p.m.
Reliability Database Development and Plant Performance Improvement Effort at Korea Hydro & Nuclear Power Co., Seung-Jong Oh, Seok-Won Hwang, Jang-Hwan Na, Hyuk-Soon Lim *(KHNP-Korea)*

1:40 p.m.
Risk-Informed Assessment of the Scope and Frequency of Technical Service and Repair at the Kozloduy Nuclear Power Plant, Vladimir Popov *(Kozloduy Nuclear Power Plant-Bulgaria)*, Vesselina Vladimirova, Georgi Georgiev, Iliyan Ivanov *(Risk Engineering Limited-Bulgaria)*, Gerald Andre, John Kitzmiller *(Westinghouse-USA)*

LOCA & non-LOCA Plant Analysis and Methodologies-II, *Session Chairs:* Donna Post Guillen *(INL-USA)*, Mark Drucker *(Southern California Edison-USA)*

Disney Exhibit Hall Room F
1:00 p.m.
Assessment on the Integrity of Component Cooling Water System during DBA with LOOP for Kori 3,4 Unit, Hyeong Taek Kim, Sung Bok Lee, Sang Won Lee *(KHNP-Korea)*, Young Chan Park *(E&ESIS-Korea)*

1:20 p.m.
Improvement of the Interfacial Drag Model in TRAC-PF1/IBER to Simulate Downcomer Boiling Phenomena, J.A. Bermejo, A. Concejal, R. Orive, P. García *(Iberdrola-Spain)*

1:40 p.m.
Sensitivity Studies on Uncertainty Parameters and Code Modeling during LBLOCA, Deog-Yeon Oh, Young Seok Bang, Byung Gil Huh, Sweng Woong Woo, Yong Jin Cho *(KINS-Korea)*

2:00 p.m.
Evaluation of Radiological Effects of the Injection of Argon Gases into Reactor Coolant System, Kimun Nam, Chaichul Im *(KOPEC-Korea)*, Wook Sohn, Duk-won Kang *(KEPRI-Korea)*

Severe Accident Phenomena – Experiment and Modeling-I, *Session Chair:* Markus Nie *(AREVA NP-Germany)*

Disney Exhibit Hall Room G
1:00 p.m.
Pre-Test Calculational Support for the QUENCH-13 Experiment, T. Haste, J. Birchley *(PSI-Switzerland)*, J.-S. Lamy, B. Maliverney *(EDF R&D-France)*, H. Austregesilo, C. Bals, K. Trambauer *(GRS Garching-Germany)*, M. Steinbrück, J. Stuckert *(FZK-Germany)*

1:20 p.m.
An Experimental Study on Debris Formation with Corium Simulant Materials, Pavel Kudinov, Aram Karbojian, Weimin Ma, Truc-Nam Dinh *(Royal Institute of Technology (KTH)-Sweden)*

1:40 p.m.
An Investigation on the Material Effect on the Result of Fuel Coolant Interaction in the TROI Experiments, I.K. Park, J.H. Kim, B.T. Min, S.W. Hong *(KAERI-Korea)*

2:00 p.m.
Comparison of the High Temperature Steam Oxidation Kinetics of Advanced Cladding Materials, M. Grosse *(FZK-Germany)*

Best Estimate Analysis Codes and Uncertainty Methodologies-I, *Session Chair:* Cesare Frepoli *(Westinghouse-USA)*

Disney Exhibit Hall Room H
1:00 p.m.
Verification and Validation of Almaraz NPP TRACE Model, César Queral, Antonio Expósito, Gonzalo Jiménez, Laura Valle *(Technical Univ of Madrid-Spain)*, Juan Carlos Martínez-Murillo *(Almaraz-Trillo AIE-Spain)*

1:20 p.m.
Parametric Sensitivity Study on the Reflooding Models of the MARS Code Based on 6x6 Rod Bundle Test Results, Ki-Yong Choi, Seok Cho, Hyoung-Kyu Cho, Chul-Hwa Song *(KAERI-Korea)*

1:40 p.m.
Implementation of a New Controlling Function in MELCOR Computer Code for Uncertainty Evaluations, Plamen V. Petkov *(Kozloduy NPP-Bulgaria)*

New Reactor Siting Issues, *Session Chair:* Nilesh Chokshi *(USNRC-USA)*

Disney Exhibit Hall Room I
1:00 p.m.
Industry Perspective - New Plant Siting, Adrian Heymer *(NEI-USA)*

1:20 p.m.
Insights Gained from Siting Nuclear Facilities in High Seismic Regions: with Comments on Japan's KKNPS, Lloyd Cluff *(PGE-USA)*

1:40 p.m.
Siting Nuclear Power Plants Under Part 52, Mark Thaggard *(USNRC-USA)*

2:00 p.m.
Lessons Learned from the North Anna Early Site Permit Project, Marvin Smith *(Dominion-USA)*

Spent Fuel Recycling Technologies-I, *Session Chair:* Dominique Greneche *(AREVA NC- France)*

Disney Exhibit Hall Room J
1:00 p.m.
Radioactive Waste Management in Romania, Gheorghe Negut, Gheorghe Ionita, Ortenzia Niculae, Ion Durdun, Stela Diaconu *(ANDRAD-Romania)*

1:20 p.m.
Prospects of Thorium - Fuel Reprocessing for Molten Salt Reactor Systems, Jan Uhlí_ *(Nuclear Research Institute Rez-Czech Republic)*

1:40 p.m.
A Study on Methodology of Optimal Characterization and Disposal Priority for Low and Intermediate Level Radioactive Wastes (LILWs) in Korea, Min Ho Ahn, Sang Chul Lee, Kun Jai Lee *(KAIST-Korea)*

2:00 p.m.
Development of an Integrated Systems Engineering Modeling Package for Chemical Separation Processes under Advanced Fuel Cycle Initiative, Ming Chang, Hsuan-Tsung (Sean) Hsieh, Yitung Chen, Matthew Hodges *(Univ of Nevada, Las Vegas-USA)*, George Vandegrif, Jackie Copple, James Laidler *(ANL-USA)*

TUESDAY, JUNE 10, 2008 • 2:30 P.M. - 4:00 P.M.

Near Term Issues-II, *Session Chair:* Jeffrey F. Hamel *(EPRI-USA)*

Disney Exhibit Hall Room A

2:30 p.m.
Future Nuclear Power Potential and Characteristics in Developing Countries, Rao Koorapaty *(Consultant-Austria)*, Andrii Gritsevskyi *(IAEA-Austria)*, Agus Cahyono *(BATAN-Indonesia)*, Masanori Moriwaki *(Hitachi/GE-Japan)*, Atam Rao *(IAEA-Austria)*

2:50 p.m.
Common User Considerations (CUC) by Developing Countries for Future Nuclear Power Plants, M. Moriwaki, A. Rao, R. Sollychin, F.M. Lignini, Y. Busurin, H. Yoon, A. Cahyono *(IAEA)*, V.M. Rao Koorapaty *(Consultant-Austria)*

3:10 p.m.
Human Resource Development for New Nuclear Power Plant Unit in Armenia, Aram Gevorgyan, Areg Galstyan *(Ministry of Energy-Armenia)*, Michael Donovan *(Scientech-USA)*

GFR and Other Advanced Concepts, *Session Chair:* Kevan D. Weaver *(Intellectual Ventures-USA)*

Disney Exhibit Hall Room B

2:30 p.m.
Gas Cooled Fast Reactor 2400 MWth, End of the Preliminary Viability Phase, J.Y. Malo, N. Alpy, F. Bertrand, T. Cadiou, N. Chauvin, P. Dumaz, D. Haubensack *(CEA Cadarache-France)*, G. Geffraye *(CEA Grenoble-France)*, N. Jonquères *(CEA Saclay-France)*, D. Lorenzo, F. Morin *(CEA Cadarache-France)*, L. Nicolas *(CEA Saclay-France)*, A. Ravenet, P. Richard *(CEA Cadarache-France)*, E. Studer *(CEA Saclay-France)*

2:50 p.m.
Studies of Unprotected Transients and Alternative Decay Heat Removal System for the Gas Cooled Fast Reactor (GFR), P. Dumaz *(CEA Cadarache-France)*, A. Epiney *(PSI-Switzerland)*, N. Alpy, P. Broxtermann, J.Y. Malo, A. Tosello *(CEA Cadarache-France)*

3:10 p.m.
Preliminary Safety Analysis of the 2400 MWth Gas-cooled Fast Reactor, F. Bertrand, C. Bassi *(CEA Cadarache-France)*, F. Bentivoglio, A. Messié *(CEA Grenoble-France)*, A. Tosello, J.Y. Malo *(CEA Cadarache-France)*

3:30 p.m.
Power Conversion System (PCS) Evaluation for the Next Generation Nuclear Plant (NGNP), G.A. Johnson *(Hamilton Sundstrand - Space, Land & Sea Rocketdyne-USA)*

Innovative/Advanced Power Conversion System-II, *Session Chairs:* Steven A. Wright *(Sandia National Lab-USA)*, Pavel Hejzlar *(MIT-USA)*

Disney Exhibit Hall Room C

2:30 p.m.
Supercritical CO2 Brayton Cycle Compression and Control Near the Critical Point, Steven A. Wright *(Sandia-USA)*, Robert Fuller, Jeff Noall *(Barber Nichols-USA)*, Ross Radel, Milton E. Vernon, Paul S. Pickard *(Sandia-USA)*

2:50 p.m.
Comparative Analysis of Supercritical CO2 Power Conversion System Control Schemes, Richard B. Vilim, Anton Moisseytsev *(ANL-USA)*

3:10 p.m.
Preliminary Design of a Turbomachinery for the Supercritical Carbon Dioxide Brayton Cycle Coupled to the KALIMER-600, J.E. Cha, S.O. Kim *(KAERI-Korea)*, T.W. Kim, K.Y. Seo *(Seoul National Univ-Korea)*

3:30 p.m.
Dynamic System Analysis of a Supercritical CO2 Compression Loop, Richard B. Vilim *(Argonne National Laboratory-USA)*, Steven A. Wright, Milton Vernon, Ross Radel, Paul S. Pickard *(Sandia National Laboratory-USA)*

Concepts for Advanced Space Systems, *Session Chair:* J. Boise Pearson *(NASA-MSFC-USA)*

Disney Exhibit Hall Room D

2:30 p.m.
Recent Developments of the MOA Thruster, a High Performance Plasma Accelerator for Nuclear Power and Propulsion Applications, Norbert Frischauf, Manfred Hettmer, Andreas Grassauer, Tobias Bartusch *(QASAR Technologie(s) - Austria)*, Otto Koudelka *(Graz Univ of Technology - Austria)*

2:50 p.m.
Computational Thermohydrodynamic Analysis of Thermal Engine Rocket Adventurer for Space Nuclear Application, Seung H. Nam *(Seoul National Univ-Korea)*, Seong G. Kang, Il K. Jung *(PHILOSOPHIA-Korea)*, Kune Y. Suh *(Seoul National Univ, PHILOSOPHIA-Korea)*

3:10 p.m.
Experimental and Research Study of Novel Nuclear Concepts (Survey of Current Results of ISTC Programs), L.V.Tocheny *(ISTC-Russia)*

Equipment Availability, Preventive Maintenance, Optimization and Best Practices-II, *Session Chair:* Ken Ferguson *(Ivara-Canada)*

Disney Exhibit Hall Room E

2:30 p.m.
Risk-Informed Assessment of the Scope and Frequency of Testing at the Kozloduy Nuclear Power Plant, Emil Kichev *(Kozloduy Nuclear Power Plant-Bulgaria)*, Tzvetan Topalov, Kaliopa Mancheva, Lyubomir Ivanov, Krasimir Kamenov *(Risk Engineering Limited-Bulgaria)*, Gerald Andre, Daniel McLaughlin *(Westinghouse-USA)*

2:50 p.m.
Application of Systems Engineering to Nuclear Power Plant Design, Hyeong Heon Kim, Taek Sang Choi, Kwang Suk Oh *(KOPEC-Korea)*

3:10 p.m.
Passing of Reactors WWER-1000 of NPP Kozloduy – Bulgaria to Extended Fuel Cycle Operation (Implementation of 235U Higher Enriched Fuel), Ivan D. Dobrevski, Neli N. Zaharieva *(Institute for Nuclear Research and Nuclear Energy–Bulgarian Academy of Sciences)*, Katia Minkova, Tsvetan Peychinov, Radka A. Ivanova, Georgi D. Michaylov, Penyo G. Penev, N. Gerchev *(NPP Kozloduy-Bulgaria)*

LOCA & non-LOCA Plant Analysis and Methodologies-I, *Session Chair:* Tim Haste *(PSI-Switzerland)*

Disney Exhibit Hall Room F
2:30 p.m.
Assessment of Core Cooling Capability of Emergency Core Cooling System in LBLOCA Condition for TAPS#3&4, Nrependra Kumar, S.K. Yadav, T.A. Khan, Mukesh Singhal, H.P. Rammohan, P.K Malhotra, S.G. Ghadge *(Nuclear Power Corporation of India Limited-India)*

2:50 p.m.
Large Break LOCA Analysis for TAPS-3&4 Using RELAP-5/MOD 3.2, S.L. Sharma, H.P. Rammohan, P.K. Malhotra, S.G. Ghadge *(Nuclear Power Corporation of India Limited-India)*

3:10 p.m.
Large Break Loss of Coolant Accident Analysis of VVER-1000 Reactor Using CATHARE Code, Luben Sabotinov *(IRSN-France)*, Abhishek Srivastava *(BARC-India)*

Severe Accident Phenomena – Experiment and Modeling-III, *Session Chair:* Karen Vierow *(Texas A&M Univ-USA)*

Disney Exhibit Hall Room G
2:30 p.m.
Application of the ASTEC V1 Code to the LIVE-L1 Experiment, Alexei Miassoedov *(FZK-Germany)*, Laurence Godin-Jacqmin *(CEA-France)*, Andrea Bachrata *(Czech Technical Univ-Czech Republic)*, Thomas Cron, Xiaoyang Gaus-Liu, Thomas Wenz *(FZK-Germany)*

2:50 p.m.
Experimental and Post-Test Calculation Results of the Integral Reflood Test QUENCH-12 with a VVER-Type Bundle, J. Stuckert *(FZK- Germany)*, J. Birchley *(PSI-Switzerland)*, M. Große *(FZK- Germany)*, T. Haste *(PSI-Switzerland)*, L. Sepold, M. Steinbrück *(FZK- Germany)*

3:10 p.m.
Direct Containment Heating Experiments for Konvoi Power Plants, Leonhard Meyer, Giancarlo Albrecht *(IKET FZK-Germany)*

3:30 p.m.
Triggered Steam Explosions with Corium Melts of Various Compositions in a Narrow Interaction Vessel in the TROI Facility, J.H. Kim, B.T. Min, I.K. Park, H.D. Kim, S.W. Hong *(KAERI-Korea)*

Best Estimate Analysis Codes and Uncertainty Methodologies-II, *Session Chair:* Cesare Frepoli *(Westinghouse-USA)*

Disney Exhibit Hall Room H
2:30 p.m.
TRACG Statistical Method for BWR Loss-of-Coolant Accident Analyses, Baris Sarikaya *(GE-Hitachi Nuclear Energy-USA)*, Jens G. M. Andersen, Francis T. Bolger, James R. Fitch, Charles L. Heck, Lev A. Klebanov, A. Kurshad Muftuoglu, Bharat S. Shiralkar, Feibiu D. Shum *(Global Nuclear Fuel-USA)*, Dan T. Rock *(Global Nuclear Fuel-USA)*

2:50 p.m.
BFBT Benchmark Sub-Channel Analysis with RELAP5-3D Code, A. Kovtonyuk, A. Petruzzi, F. D'Auria *(Univ of Pisa-Italy)*

3:10 p.m.
Assessment of Compensating Error in the WCOBRA/TRAC-TF2 Thermal-Hydraulic Code, Michael A. Shockling, Cesare Frepoli *(Westinghouse-USA)*

3:30 p.m.
Development and Qualification of the Coupled Code System COBRA-TF/THREEDANT for the Pin-by-Pin Power Calculation, V. Sanchez *(FZK-Germany)*, A. Al-Hamry *(Fachhochschule Aachen-Germany)*, C. H. M. Broeders *(FZK-Germany)*

International Activities on Codes and Standards for New Reactor Designs Relationship of the Regulatory and Inspection Process to Design, *Session Chair:* Michael Mayfield *(USNRC-USA)*

Disney Exhibit Hall Room I
2:30 p.m.
U.S. Licensing Process for New Reactors, David Mathews *(USNRC-USA)*

2:50 p.m.
U.S. New Reactor Inspection Process, Glenn Tracy *(USNRC-USA)*

3:10 p.m.
ASME Perspectives of the Regulatory/Design Interface, Michael Hessheimer *(SNL-USA)*

Spent Fuel Recycling Technologies-II, *Session Chair:* Dominique Greneche *(AREVA NC- France)*

Disney Exhibit Hall Room J
2:30 p.m.
Development of FR Fuel Cycle in Japan (1) - Development Scope of Fuel Cycle Technology, Hirofumi Nakamura, Hideyuki Funasaka, Takushi Namekawa *(JAEA-Japan)*

2:50 p.m.
Development of FR Fuel Cycle in Japan (2) Basic Design and Verification of U-Pu-Np Co-recovery Flowsheets for Engineering Scale Hot Examination in Japan, Hiroki Nakabayashi, Toshihisa Nagai *(JAEA-Japan)*

3:10 p.m.
Development of FR Fuel Cycle in Japan (3) - Current State on Unified Technology of Denitration Conversion and Granulation for Simplified Pellet Fuel Fabrication Based on Microwave Heating, Masahiro Suzuki, Katsunori Ishii, Takuma Yamamoto, Yoshiyuki Kato, Tsutomu Kurita, Katsunobu Yoshimoto, Yoshiyuki Kihara, Takashi Namekawa, Kan-ichi Fujii *(JAEA-Japan)*

3:30 p.m.
Development of FR fuel cycle in Japan (4) Consideration of Transition from LWR-cycle to FR-cycle, Fuminori Sato, Hirofumi Nakamura *(JAEA-Japan)*

TUESDAY, JUNE 10, 2008 • 4:00 P.M. - 6:00 P.M.

ICAPP '08 Plenary 3: Nuclear Fuel Cycle Strategies and Technology Options, *Session Chairs:* Mujid Kazimi *(MIT-USA)*, Jean Claude Gauthier *(AREVA-France)*

Disney South Exhibit Hall

SPEAKERS:

- Phillip Finck *(Idaho National Laboratory-USA, Associate Laboratory Director for Nuclear Science and Technology)*
- Takashi Nagata *(JAEA-Japan, General Director of Advanced Nuclear System R&D Directorate)*
- Bernard Boullis *(CEA-France, Director of Fuel Cycle Technology Studies)*
- Jin Hong Kim *(Ministry of Science and Technology-Korea, Director, Nuclear Policy Division, Atomic Energy Bureau)*

WEDNESDAY • JUNE 11, 2008

7:30 AM – 5:00 PM	**MEETING REGISTRATION**
8:00 AM – 10:00 AM	**SPOUSE/GUEST HOSPITALITY**
8:00 AM – 10:00 AM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #4:** "Globalization of Nuclear Energy: Challenges and Opportunities"
8:30 AM – 11:30 AM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** (see page 25)
8:30 AM – 11:30 AM	**ISOTOPES EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 59)
8:30 AM – 11:30 AM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
10:00 AM – 12:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** • Innovative/Evolutionary, Advanced PWRs • Modeling and Simulation of GCRs • Sodium-cooled Fast Reactors (SFR)-I • Upgrading the Research Reactor Capabilities for Advanced Technology Development • Digital I&C for New Reactors-II • Development in Severe Accident Analysis, Codes and Management-I • Sustainability: International • CFD Applications to Water, Liquid Metal and Gas Reactors-I • Advances in Two-Phase Flow and Heat Transfer-I • Materials Issues for Next Generation NPP: Environment
1:00 PM – 4:00 PM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** (see page 25)
1:00 PM – 2:30 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** • Materials and Structures Testing-I • Regulatory Oversight of Construction • Sodium-cooled Fast Reactors (SFR): The French Program • Supercritical Water-cooled Reactor (SCWR)-I • Development in Life Extension Issues and Advances in Regulatory Safety Assessment-I • Development in Severe Accident Analysis, Codes and Management-II • Reactor Physics Methods, Codes and Validation • CFD Applications to Water, Liquid Metal and Gas Reactors-II • Advances in Two-Phase Flow and Heat Transfer-II • Strategies for Advanced Fuel Cycles
1:00 PM – 4:00 PM	**ISOTOPES EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** (see page 59)
1:00 PM – 4:00 PM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
2:30 PM – 4:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** • Materials and Structures Testing-II • Key Licensing and Regulatory Issues for Gen III, III+, IV Reactors • Sodium-cooled Fast Reactors (SFR)-II • Supercritical Water-cooled Reactor (SCWR)-II • Development in Life Extension Issues and Advances in Regulatory Safety Assessment-II • Development in Severe Accident Analysis, Codes and Management-III • CFD Applications to Water, Liquid Metal and Gas Reactors-III • Advances in Two-Phase Flow and Heat Transfer-III • Advanced Fuel Cycles, Recycling, and Actinide Transmutation
4:00 PM – 6:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #5:** "Infrastructure Issues"
4:00 PM – 6:00 PM	**ANS PUBLIC COMMUNICATIONS WORKSHOP**
6:30 PM – 10:30 PM	**EVENING EVENT:** "An Evening at the Bowers Museum of Cultural Art"
7:00 PM – 9:00 PM	**NFSM EMBEDDED TOPICAL MEETING: POSTER SESSION** (see page 63)

WEDNESDAY, JUNE 11, 2008 • 8:00 A.M. - 10:00 A.M.

ICAPP '08 Plenary 4: Globalization of Nuclear Energy: Challenges and Opportunities, *Session Chairs:* Atam Rao *(IAEA)*, Jong-In Lee *(KNS-Korea)*

Disney South Exhibit Hall

SPEAKERS:

- The Global Nuclear Energy Partnership, Dennis Spurgeon *(US DOE-USA)*
- Developing Countries and Nuclear Power, Atam Rao *(IAEA)*
- Fuel Cycle Globalization Issues, Bruno Pellaud *(Consultant)*
- Collaborative Development of Technology Options, Regis Matzie *(Westinghouse-USA)*
- Developing a Multinational Work Force, Phillippe Vivien *(AREVA)*
- TBA, Carol Bergeron *(NEI-USA)*

WEDNESDAY, JUNE 11, 2008 • 10:00 A.M. - 12:00 P.M.

Innovative/Evolutionary, Advanced PWRs, *Session Chairs:* Toney Mathews *(AREVA NP-USA)*, Shigemitsu Otsuka *(MHI-Japan)*

Disney Exhibit Hall Room A

10:00 a.m.

IRIS: A Comprehensive Approach to Nuclear Power in Smaller-Sized and Developing Countries, Mario D. Carelli *(Westinghouse-USA)*, B. Petrovic *(Georgia Institute of Technology-USA)*, L. Sandell, G.D. Storrick *(Westinghouse-USA)*

10:20 a.m.

Justification and Manufacturing Quality Assurance for the Use of Hot Isostatically Pressed, Reactor Coolant System Components in PWR Plant, J.L. Sulley, I.D. Hookham *(Rolls Royce-UK)*

10:40 a.m.

EPR: High Load Variation Performances with the Tmode Core Control, Alain Grossetete *(AREVA NP-France)*

11:00 a.m.

An Integrated PWR for Marine Propulsion, A. Letouze, A. Marecaux *(Ecole des Applications Militaires de l'Energie Atomique-France)*, J. Rollason *(Devonport Management-UK)*, S. Heap, A. Foster, S. Jewer, A.C. Thompson, A.M. Williams, P.A. Beeley *(Defense College of Management and Technology-UK)*

11:20 a.m.

European Passive Plant (AP1000 -Europe) Design Status, Kathyn J. Demetri *(Westinghouse-USA)*, Gianfranco Saiu *(Ansaldo Nuclear-Italy)*

Modeling and Simulation of GCRs, *Session Chair:* Patrick Dumaz *(CEA-France)*

Disney Exhibit Hall Room B

10:00 a.m.

Implications of Air Ingress Induced by Density-Difference Driven Stratified Flow, Chang Oh, Eung Soo Kim, Richard Scultz, David Petti *(INL-USA)*, C.P. Liou *(Univ of Idaho-USA)*

10:20 a.m.

A Three-Dimensional Heat Transfer Analysis on the Prismatic Fuel Elements in the Very High Temperature Reactor, Nam-il Tak, Min-Hwan Kim, Won-Jae Lee *(KAERI-Korea)*

10:40 a.m.

3D Thermal Simulation of Decay Heat Removal in a HTR Half Geometry, C. Peniguel, I. Rupp, F. Archambeau *(EDF-France)*

11:00 a.m.
TINTE Transient Results for the OECD PBMR 400 MW PBMR Benchmark, Gerhard Strydom *(PBMR-South Africa)*

Sodium-cooled Fast Reactors (SFR)-I, *Session Chairs:* Eric Loewen *(GE Hitachi Nuclear Energy-USA)*, Jean-Pol Serpantié *(AREVA NP-France)*

Disney Exhibit Hall Room C
10:00 a.m.
Design Approaches from Breakeven Core to TRU Burner Core Based on KALIMER-600 Reactor, Jae-Yong Lim, Sang-Ji Kim, Yeong-Il Kim *(KAERI-Korea)*

10:20 a.m.
Conceptual Core Designs for a 1200MWe Sodium Cooled Fast Reactor, Hyung-Kook Joo, Ki-Bog Lee, Jae-Woon Yoo, Yeong-Il Kim *(KAERI-Korea)*

10:40 a.m.
Improving SFR Economics through Innovations from Thermal Design and Analysis Aspects, Haihua Zhao, Hongbin Zhang, Vincent A. Mousseau *(INL-USA)*, Per F. Peterson *(Univ of California, Berkeley-USA)*

11:00 a.m.
RELAP5 Analysis of the Hybrid Loop-Pool Design for Sodium Cooled Fast Reactors, Hongbin Zhang, Haihua Zhao, Cliff Davis *(INL-USA)*, Matthew Memmott *(MIT-USA)*

Upgrading the Research Reactor Capabilities for Advanced Technology Development, *Session Chair:* Trent Primm *(ORNL-USA)*

Disney Exhibit Hall Room D
10:00 a.m.
Thermal Hydraulics Analysis of the MIT Research Reactor Low Enrichment Uranium (LEU) Core, Yu-Chih Ko, Lin-Wen Hu, Mujid S. Kazimi *(MIT-USA)*

10:20 a.m.
Advanced Test Reactor - National Scientific User Facility: Research Proposal Process Lessons Learned, Clifford J. Stanley, Frances M. Marshall, Mary Catherin Thelen *(INL-USA)*

10:40 a.m.
Proposed Fuel Pin Irradiation Facilities for the High Flux Isotope Reactor, J.L. McDuffee, J.C. Gehin, R.J. Ellis, R.W. Hobbs, R.T. Primm, III *(ORNL-USA)*

11:00 a.m.
Innovations in Design for the Enhancement of Experimental Neutron Flux at the Massachusetts Institute of Technology Research Reactor, Tyler Ellis, Thomas Newton, Jr. *(MIT-USA)*

11:20 a.m.
The ATR National Scientific User Facility: A New Role for a National Asset, Mitchell K. Meyer, Frances Marshall *(INL-USA)*

Digital I&C for New Reactors-II, *Session Chair:* Edward Quinn *(GE-Hitachi Nuclear Energy-USA)*

Disney Exhibit Hall Room E

10:00 a.m.
Top-Mounted Incore Instrumentation Insertion Test for Westinghouse AP1000, Thomas A. Kindred, Daniel P. Kistler, Michael C. Prible, Joe Hahn, John Iacovino, Michael D. Heibel *(Westinghouse-USA)*

10:20 a.m.
Design of a Software Training System for Severe Accident Mitigation of Korean Standard Nuclear Power Plants, Ko-Ryu Kim, Soo-Yong Park, Yong-Man Song *(KAERI-Korea)*

10:40 a.m.
APR1400 I&C Architecture with the Advanced Design Feature Including High Reliability and Maintainability, Sung Kon Kang, Byoung Hwan Bae, Song Hae Ye *(KHNP-Korea)*

11:00 a.m.
Strategy for Establishing Integrated I&C Reliability of Operating Nuclear Power Plants in Korea, H.T. Kang, H.Y. Chung, Y.H. Lee *(KHNP-Korea)*

11:20 a.m.
Westinghouse AP1000 Protection & Safety Monitoring System, W.R. Odess-Gillett, C.A. Vitalbo *(Westinghouse-USA)*

Development in Severe Accident Analysis, Codes and Management-I, *Session Chair:* Eric Williams *(AREVA NP-USA)*

Disney Exhibit Hall Room F
10:00 a.m.
Effect of Break Size on Severe Core Damage Behavior for VVER1000 Reactor with the ASTEC V1 Code, B. Chatterjee, D. Mukhopadhyay, H.G. Lele, A.K. Ghosh *(Bhabha Atomic Research Centre-India)*

10:20 a.m.
MAAP4.0.7 Analysis for PRA Level 1 Mission Success Criteria, Jennifer S. Butler, Darvin Kapitz, Robert P. Martin, Farrokh Seifaee, Ramu K. Sundaram *(AREVA-USA)*

10:40 a.m.
MAAP4.0.7 Severe Accident Source Term Analysis, Amy C. Slaga, Stanley H. Levinson *(AREVA NP-USA)*, Robert Prior *(AREVA NP SAS-France)*, David Gerlits *(AREVA NP-USA)*

11:00 a.m.
Analysis of Station Blackout in the Gösgen Nuclear Plant, T. Haste, J. Birchley *(Paul Scherrer Institute-Switzerland)*, J.-U. Klügel *(Kernkraftwerk Gösgen-Däniken-Switzerland)*

11:20 a.m.
SCDAP/RELAP5 Investigation on Coolability of Severely Degraded CANDU 6 Core – Preliminary Results, Daniel Dupleac, Ilie Prisecaru *(Politehnica Univ-Romania)*, Mirea Mladin *(Institute for Nuclear Research-Romania)*, Gheorghe Negut *(Politehnica Univ-Romania)*

11:40 a.m.
Dynamic Structural Analysis Concerning Integrity Assessment of a Reinforced Concrete Ceiling due to Impact Loads, J. Sievers, P. Eisert, P. Bachmann *(GRS-Germany)*

Sustainability: International, *Session Chair:* Tom Mulford *(EPRI-USA)*

Disney Exhibit Hall Room G

10:00 a.m.
IAEA's Study of Advanced Applications of Water Cooled Nuclear Power Plants, John Cleveland, Alan McDonald, Atam Rao *(IAEA)*

10:20 a.m.
Analytical Hierarchy Process for the Selection of Nuclear Reactors for Mexico, Cecilia Martin-del-Campo, Pamela F. Nelson, Juan Luis François *(UNAM-Mexico)*

10:40 a.m.
New Power Expansion Strategy and Low GHG Emitting Economy in Korea, Whan-Sam Chung, Sung-Won Yun, Dae Sung Lee *(KAERI-Korea)*, Jae-Woo Jeong *(Korea Accreditation Board-Korea)*

11:00 a.m.
The Role of Nuclear Power in CO2 Emission Reduction in Korea, Seung-Su Kim, Man-Ki Lee *(KAERI-Korea)*

11:20 a.m.
Evaluation of the Scenario for Innovative Russian Nuclear Power Development, Alexander Chebeskov, Victor Dekusar *(IPPE-Russia)*

CFD Applications to Water, Liquid Metal and Gas Reactors-I, *Session Chair:* Si Young Lee *(Savannah River National Lab.-USA)*

Disney Exhibit Hall Room H
10:00 a.m.
Pressure Loss Coefficient Evaluation Based on CFD Analysis for Simple Geometries and PWR Reactor Vessel without Geometry Simplification, Byeong Il Ko, Jong Pil Park, Ji Hwan Jeong *(Pusan National Univ-Korea)*

10:20 a.m.
CFD Estimation of the Heat Transfer due to the Natural Convection in a CEA Extension Shaft Guide Tube, Seong Hoon Kim, Young In Kim, Chun Tae Park, Jae Kwang Seo *(KAERI-Korea)*

10:40 a.m.
System/CFD Coupling for Reactor Transient Analysis. An Application to the Gas Fast Reactor with CATHARE and TRIO_U, Fabien Perdu, Simone Vandroux *(CEA Grenoble-France)*

11:00 a.m.
A CFD Solver with Variable Gas Properties for Applications to High Temperature Gas Cooled Reactors, Anne Charmeau, Samim Anghaie *(Univ of Florida-USA)*

11:20 a.m.
Free Surface Modeling and Simulation of the Water Experiment for the XT ADS Spallation Target, Abdalla Batta, Andreas Class *(FZK-Germany)*

Advances in Two-Phase Flow and Heat Transfer-I, *Session Chair:* Michael A. Shockling *(Westinghouse-USA)*

Disney Exhibit Hall Room I
10:00 a.m.
On the Modeling of Channel-to-Channel Oscillations in Boiling Water Reactors, Sebastien Roubaud, Michael Z. Podowski *(RPI-USA)*

10:20 a.m.
Heat Transfer in Intermediate Heat Exchanger under Low Flow Rate Conditions, Hiroyasu Mochizuki *(Univ of Fukui-Japan)*

10:40 a.m.
Identification of the Relation between Turbulence Coefficient and Local Wall Thinning inside Carbon Steel Piping, Kyeong Mo Hwang, Tae Eun Jin *(KOPEC-Korea)*, Lee Woo, Kyung Hoon Kim *(Kyunghee Univ-Korea)*

11:00 a.m.
Theoretical and Experimental Study of Steam Condensation Induced Water Hammer Phenomena, Imre Ferenc Barna, Gábor Baranyai, György Ézsöl *(AEKI-Hungary)*

Materials Issues for Next Generation NPP: Environment, *Session Chairs:* Jim Cole *(INL-USA)*, Woo-Seog Ryu *(KAERI-Korea)*

Disney Exhibit Hall Room J
10:00 a.m.
Creep Behaviors of Alloy 617 at Temperatures between 800 and 1000oC, Daejong Kim, Changheui Jang *(KAIST-Korea)*, Woo Seog Ryu *(KAERI-Korea)*

10:20 a.m.
Corrosion Studies of Candidate Materials for European HPLWR, Sami Penttilä, Aki Toivonen, Liisa Heikinheimo *(VTT-Finland)*, Radek Novotny *(JRC-IE-The Netherlands)*

10:40 a.m.
Theoretical Design of SCC Resistant Ni-base Alloy by Computational Chemistry Approach, Nishith Kumar Das, Ken Suzuki, Yoichi Takeda, Kazuhiro Ogawa, Tetsuo Shoji *(Tohoku Univ-Japan)*

WEDNESDAY, JUNE 11, 2008 • 1:00 P.M. - 2:30 P.M.

Materials and Structures Testing-I, *Session Chair:* Travis W. Knight *(Univ of South Carolina-USA)*

Disney Exhibit Hall Room A
1:00 p.m.
Correlation between Intrinsic Hardness and Defect Structures of Ion Irradiated Fe Alloys, Chansun Shin, Hyung Ha Jin, Junhyun Kwon *(KAERI-Korea)*

1:20 p.m.
Dynamics of Frictional Interaction of a Fuel Rod Cladding and Spacer Grid Cell in a Fuel Assembly, Yu. Drozdov *(IMASH Machine Study Institute-Russia)*, V. Makarov, A. Afanasiev, I. Matvienko *(FSUE OKB, Gidropress-Russia)*, T. Savinova *(IMASH Machine Study Institute-Russia)*

1:40 p.m.
Ultrasonic TOFD Method Application for Steel Components and Welds of 10mm Wall Thickness Using Digital Ultrasonic Flaw Detector and ULTRA 7- TOFD Software, K. Kasarov, B. Tabakova *(Technical Univ Sofia-Bulgaria)*

2:00 p.m.
Study of the Tunneling Effect within Lattices with Cubic Structure on Varying Temperature, Fulvio Frisone *(Univ of Catania-Italy)*

Regulatory Oversight of Construction, *Session Chair:* Glenn Tracy *(USNRC-USA)*

Disney Exhibit Hall Room B
1:00 p.m.
Regulatory Oversight of New Reactor Construction in the U.S., Richard Rasmussen *(USNRC-USA)*

1:20 p.m.
Regulatory Oversight of New Reactor Construction in France, Guillame Wack *(ASN-France)*

1:40 p.m.
Regulatory Oversight of New Reactor Construction in Korea, Sungho Yang *(KINS-Korea)*

2:00 p.m.
Regulatory Oversight of New Reactor Construction in Japan, Kiyoharu Abe *(JNES-Japan)*

Sodium-cooled Fast Reactors (SFR): The French Program, *Session Chairs:* Eric Loewen *(GE Hitachi Nuclear Energy-USA)*, Jean-Pol Serpantié *(AREVA NP-France)*

Disney Exhibit Hall Room C
1:00 p.m.
Studies on French SFR Advanced Core Designs, G. Mignot, J.C. Klein, J.C. Klein, C. Thevenot, A. Ravenet, M. Pelletier, B. Valentin, P. Masoni, P. Dubuisson, L. Nicolas *(CEA-France)*, D. Verrier, A.C. Scholer, D. Ruah, V. Garat *(AREVA-NP-France)*, D. Lecarpentier, Ph. Tétart, B. Maliverney, S. Massara *(EDF/RD-France)*

1:20 p.m.
Innovative Steam Generator Concepts for Sodium Fast Reactors, B. Giraud, C. Mauget *(AREVA NP-France)*, A. Capitaine *(EDF-France)*, G. Laffont *(CEA-France)*

1:40 p.m.
Sodium Fast Reactor Concepts, G. François, J.P. Serpantié *(AREVA-France)*, J.F. Sauvage *(EDF-France)*, P. Lo Pinto *(CEA-France)*

2:00 p.m.
The Use of Gas Based Energy Conversion Cycles for Sodium Fast Reactors, M. Saez, D. Haubensack, N. Aply *(CEA-France)*, A. Gerber *(AREVA NP-France)*, F. David *(EDF-France)*

Supercritical Water-cooled Reactor (SCWR)-I, *Session Chair:* X. Cheng *(FZK-Germany)*

Disney Exhibit Hall Room D
1:00 p.m.
Progress within the European Project "High Performance Light Water Reactor Phase 2" (HPLWR Phase 2), J. Starflinger, T. Schulenberg *(Forschungszentrum Karlsruhe - Germany)*, P. Marsault *(CEA Cadarache Center - France)*, D. Bittermann *(AREVA NP - Germany)*, C. Maraczy *(AEKI-KFKI - Hungary)*, E. Laurien *(University of Stuttgart - Germany)*, J.-A. Lycklama *(NRG Petten - The Netherlands)*, H. Anglart *(KTH Nuclear Energy Technology - Sweden)*, N. Aksan *(Paul Scherrer Institut - Switzerland)*, M. Ruzickova *(UJV Rez plc - Czech Republic)*, L. Heikinheimo *(VTT - Finland)*

1:20 p.m.
Coolant Mixing in the Plenum of the HPLWR Three Pass Core, Alexander Wank, Thomas Schulenberg, Andreas G. Class *(FZK-Germany)*

1:40 p.m.
Determination of Mixing Coefficients in a Wire-Wrapped HPLWR Fuel Assembly using CFD, Steffen Himmel, A.G. Class *(FZK-Germany)*, E. Laurien *(Univ Stuttgart-Germany)*, T. Schulenberg *(FZK-Germany)*

2:00 p.m.
Numerical Simulation of a HPLWR Fuel Assembly Flow with Wrapped Wire Spacers, A. Kiss *(Budapest Univ of Technology and Economics-Hungary)*, E. Laurien *(Univ of Stuttgart-Germany)*, A. Aszodi *(Budapest Univ of Technology and Economics-Hungary)*

Development in Life Extension Issues and Advances in Regulatory Safety Assessment-I, *Session Chair:* Christian Clément *(EDF-France)*, Takeshi Morita *(JAPC-Japan)*

Disney Exhibit Hall Room E
1:00 p.m.
A Study on the Operator's Communication Pattern Characteristics under Abnormal Operating Situation of Nuclear Power Plants, Seung Hwan Kim, Jinkyun Park *(KAERI-Korea)*

1:20 p.m.
Mechanism-based Ageing Management of Primary Water Stress Corrosion Cracking of Ni-base Components in PWR Environments, Tae Hyun Lee, Il Soon Hwang *(Seoul National Univ-Korea)*

1:40 p.m.
A Study on the Verification and Validation of Programmable Logic Component in A Nuclear Power Plant, G.Y. Park, D.I. Kim, C.H. Jung *(KINS-Korea)*

2:00 p.m.
U.S. NRC's Generic Issues Program, John V. Kauffman, Jack W. Foster *(USNRC-USA)*

Development in Severe Accident Analysis, Codes and Management-II, *Session Chairs:* Eric Williams *(AREVA NP-USA)*, Sama Bilbao y Leon *(IAEA)*

Disney Exhibit Hall Room F
1:00 p.m.
Relevant Scenarios and Uncertainty Analysis of Severe Accidents in the U.S. EPR, Robert P. Martin, Michael W. Bingham, Eric Williams *(AREVA-USA)*, Arnaud Caillaux *(AREVA-France)*

1:20 p.m.
Recent Revisions to MAAP4 for U.S. EPR Severe Accident Applications, Eric Williams, Robert Martin *(AREVA NP-USA)*, Pascal Gandrille, Rui Meireles, Robert Prior *(AREVA NP SAS-France)*, Chris Henry, Quan Zhou *(Fauske and Associates-USA)*

1:40 p.m.
AREVA NP's Severe Accident Safety Issue Resolution Methodology for the U.S. EPR, Robert P. Martin, Michael W. Bingham, Carlos A. Bonilla, Jennifer S. Butler, Paul D. Duncan-Whiteman, Patrick Gruenewald, Amy C. Slaga, Eric Williams *(AREVA-USA)*, Garo Azarian *(AREVA-France)*, Markus Nie *(AREVA-Germany)*

2:00 p.m.
Influence of Jet Breakup Modeling on Ex-Vessel Steam Explosion Simulation Results, Matjaž Leskovar *(Jožef Stefan Institute-Slovenia)*

Reactor Physics Methods, Codes and Validation (1:00 P.M. – 4:00 P.M.), *Session Chair:* Christine Poinot-Salanon *(CEA-France)*

Disney Exhibit Hall Room G

1:00 p.m.
A Heterogeneous Model for Burnup Calculation in High Temperature Gas Cooled Reactors, Christopher M. Perfetti, Samim Anghaie *(Univ of Florida-USA)*, Alan Baxter, Chris Ellis *(General Atomics-USA)*

1:20 p.m.
The Enhancements and Testing for the MCNPX Depletion Capability, Michael L. Fensin *(Univ of Florida/LANL-USA)*, John S. Hendricks *(LANL-USA)*, Samim Anghaie *(Univ of Florida-USA)*

1:40 p.m.
A New Method to Compute the Dominance Ratio in Monte Carlo Simulations - Application to a Simple Pin Cell with the 3-D Monte Carlo code Tripoli-4, Eric Dumonteil, Tanguy Courau *(CEA Saclay-France)*

2:00 p.m.
Pin-by-Pin Power Reconstruction in the Future EDF Calculation Scheme, E. Girardi, M. Cometto, T. Courau, D. Couyras, N. Schwartz *(EDF R&D-France)*

2:30 p.m.
Element of Validation of Microscopic Depletion for the Future EDF Calculation Scheme Based on APOLLO2 and COCAGNE Codes, F. Hoareau, F. Laugier, D. Couyras *(EDF R&D-France)*

2:50 p.m.
Elements of Validation of Pin-by-Pin Calculations with the Future EDF Calculation Scheme Based on APOLLO2 and COCAGNE Codes, Tanguy Courau, Marco Cometto, Enrico Girardi, David Couyras, Nadine Schwartz *(EDF R&D-France)*

CFD Applications to Water, Liquid Metal and Gas Reactors-II, *Session Chair:* Anne Charmeau *(Univ of Florida-USA)*

Disney Exhibit Hall Room H
1:00 p.m.
RANS-based CFD Simulations of Wire-Wrapped Fast Reactor Fuel Assemblies, W. David Pointer, Paul Fischer, Andrew Siegel *(Argonne National Laboratory-USA)*, Jeffrey Smith *(Kansas State Univ-USA)*

1:20 p.m.
CFD Predictions of Heat Transfer in the Super Critical Flow Regime, D.C. Visser, J.A. Lycklama a Nijeholt, F. Roelofs *(NRG-The Netherlands)*

1:40 p.m.
CFD Calculations of the Assembly of VVER-440 type PWR Reactors, István Farkas *(KFKI AEKI-Hungary)*

Advances in Two-Phase Flow and Heat Transfer-II, *Session Chair:* Michael A. Shockling *(Westinghouse-USA)*

Disney Exhibit Hall Room I
1:00 p.m.
Transient Accident Analysis of the Glovebox System in a Large Process Room, Si Y. Lee *(Savannah River National Laboratory-USA)*

1:20 p.m.
Pressure Drop Characteristics of Cross-Shaped Spiral (CSS) Rod Bundle for LWRs, T. Conboy, T. McKrell, P. Hejzlar, M.S. Kazimi *(MIT-USA)*

1:40 p.m.
Application of the Subchannel Analysis Code MATRA for Low Flow and Low Pressure Conditions, Kyong-Won Seo, Dae-Hyun Hwang, Chung-Chan Lee *(KAERI-Korea)*

2:00 p.m.
Optimizing Critical Heat Flux Enhancement through Nanoparticle-Based Surface Modifications, Bao Truong, Lin-Wen Hu, Jacopo Buongiorno *(MIT-USA)*

Strategies for Advanced Fuel Cycles, *Session Chair:* Toshikazu Takeda *(Osaka Univ-Japan)*

Disney Exhibit Hall Room J
1:00 p.m.
A Contingency Safe, Responsible, Economic, Increased Capacity Spent Nuclear Fuel (SNF) Disposition to Avoid Interference with Yucca Mountain Licensing, Salomon Levy *(Levy & Associates-USA)*

1:20 p.m.
Market Share Scenarios for Gen-III and Gen-IV Reactors in Europe, Ferry Roelofs, Aliki van Heek *(NRG-The Netherlands)*, Luc Van Den Durpel *(LISTO-Belgium)*

1:40 p.m.
Progress in Development of Erbia-Bearing Super High Burnup Fuel, Masatoshi Yamasaki, Takeshi Kuroishi *(Nuclear Fuel Industries, Ltd.-Japan)*, Toshikazu Takeda *(Osaka Univ-Japan)*, Akio Yamamoto *(Nagoya Univ-Japan)*, Hironobu Unesaki *(Kyoto Univ-Japan)*, Masaaki Mori *(Nuclear Engineering, Ltd-Japan)*

WEDNESDAY, JUNE 11, 2008 • 2:30 P.M. - 4:00 P.M.

Materials and Structures Testing-II, *Session Chair:* Travis W. Knight *(Univ of South Carolina- USA)*

Disney Exhibit Hall Room A
2:30 p.m.
High Temperature Material Properties for Metals used in LWR Vessels, J.L. Rempe, D.L. Knudson *(INL-USA)*, J.E. Daw, J.C. Crepeau (*Univ of Idaho-USA)*

2:50 p.m.
Flaw Tolerance Evaluation to Support Alternative Examination Volume and/or Inspection Interval for Nickel-Based Alloy Components, C.K. Ng, A. Udyawar, S. Swamy *(Westinghouse-USA)*

3:10 p.m.
Oxide Fouling Mitigation Technology in BWR, Young-Jin Kim *(GE Global Research Center-USA)*, Catherine Dulka *(GE Hitachi Nuclear Energy-USA)*

3:30 p.m.
Flexural Behavior of Concrete Beam with Mechanical Splices of Reinforcement Subjected to Cyclic Loading, H.S. Nah *(KEPRI-Korea)*, W.B. Kim *(Kongju National Univ-Korea)*

Key Licensing and Regulatory Issues for Gen III, III+, IV Reactors, *Session Chair:* Edward Baker *(USNRC-USA)*

Disney Exhibit Hall Room B
2:30 p.m.
U.S. Next Generation Nuclear Plant Licensing Strategy, Edward Baker *(USNRC-USA)*

2:50 p.m.
Challenges and Opportunities for the Next Generation of U.S. Reactors, Dick Black *(USDOE-USA)*

3:10 p.m.
South African Licensing Experience with the PBMR, Guy Clapisson *(South Africa National Nuclear Regulator-South Africa)*

Sodium-cooled Fast Reactors (SFR)-II, *Session Chairs:* Jean-Pol Serpantié *(AREVA NP-France)*, Eric Loewen *(GE Hitachi Nuclear Energy-USA)*

Disney Exhibit Hall Room C
2:30 p.m.
Design Studies of Large-Scale Sodium-Cooled TRU Burner, Hoon Song, Sang-Ji Kim, Hae-Yong Jeong, Yeong-Il Kim *(KAERI-Korea)*

2:50 p.m.
Inherent Safety Evaluation of Pool-type Liquid Metal Fast Reactors by a Multidimensional Thermal-hydraulic Calculation, Y.M. Kwon, K.S. Ha, H.Y. Jeong, W.P. Chang, Y.B. Lee, D. Hahn *(KAERI-Korea)*

3:10 p.m.
Global Cooperation and Conceptual Design ARR and Recycling Strategy, Kazumi Ikeda *(Mitsubishi FBR Systems-Japan)*, Kim Stein *(AREVA NP-USA)*, Wataru Nakazato *(Mitsubishi Heavy Industries-Japan)*, Makoto Mito *(Mitsubishi FBR Systems-Japan)*

3:30 p.m.
An Assessment of Annular Fuel for Sodium-Cooled Fast Reactors, Matthew Memmott, Jacopo Buongiorno, Pavel Hejzlar *(MIT-USA)*

Supercritical Water-cooled Reactor (SCWR)-II, *Session Chair:* Joerg Starflinger *(FZK-Germany)*

Disney Exhibit Hall Room D
2:30 p.m.
Thermo-Mechanical Stress and Deformation Analysis of a HPLWR Pressure Vessel and Steam Plenum, K. Fischer *(EnBW Kernkraft-Germany)*, T. Redon *(Univ Karlsruhe-Germany)*, G. Millet, C. Koehly, T. Schulenberg *(FZK-Germany)*

2:50 p.m.
Coupling Analysis on a New SCWR Core Design, X.J. Liu, X. Cheng *(Shanghai Jiao Tong Univ-China)*

3:10 p.m.
Prediction of Overheated Zones along the Wall of Strongly Heated Quasi-Fully Developed Pipe Flow at Supercritical Pressure, E. Laurien, M. Rashid *(Univ of Stuttgart-Germany)*

3:30 p.m.
Summary for Three Different Validation Cases of Water Coolant Flow in Supercritical Water Test Sections with the Code ANSYS CFX 11.0, Attila Kiss, Attila Aszodi *(Budapest Univ of Technology and Economics-Hungary)*

Development in Life Extension Issues and Advances in Regulatory Safety Assessment-II, *Session Chair:* Christian Clément *(EDF-France)*, Takeshi Morita *(JAPC-Japan)*

Disney Exhibit Hall Room E
2:30 p.m.
Korean Experience in Periodic Safety Reviews and Safety Improvements of Operating Nuclear Power Plants, In-Goo Kim, Jong-Tae Ha, Kyun-Tae Kim *(KINS-Korea)*

2:50 p.m.
Introduction of Regulatory Guide on Cyber Security of I&C Systems in Nuclear Facilities, Youngdoo Kang, Choong-Heui Jeong, Dai I. Kim *(KINS-Korea)*

3:10 p.m.
Resolution of Digital Instrumentation and Control and Human Factors Technical and Regulatory Issues for New Plants and for Modernization of Operating Plants, Joseph A. Naser, Raymond C. Torok, Kenneth T. Canavan *(EPRI-USA)*

Development in Severe Accident Analysis, Codes and Management-III, *Session Chair:* Robert P. Martin *(AREVA NP-USA)*

Disney Exhibit Hall Room F
2:30 p.m.
Modeling of Two-Phase Natural Circulation in a Water Pool with Decay-Heated Debris Bed, Sergey Yakush *(Russian Academy of Sciences-Russia)*, Pavel Kudinov, Truc-Nam Dinh *(Royal Institute of Technology (KTH)-Sweden)*

2:50 p.m.
Thermodynamic Analysis for the Melt Pool Configuration during the Severe Accidents in the APR1400, Kyoung-Ho Kang, Rae-Joon Park, Seong-Wan Hong *(KAERI-Korea)*

3:10 p.m.
Transient Conduction Heat Transfer Modelling in Concrete for the Simulation of Long Term Phase of Molten Core Concrete Interaction, B. Tourniaire, B. Spindler, M. Guillaumé *(CEA-France)*

3:30 p.m.
Interaction between Molten Corium UO2+x - ZrO2- FeOy and VVER Vessel Steel, S.V. Bechta, V.S. Granovsky, V.B. Khabensky, E.V. Krushinov, S.A. Vitol, A.A. Sulatsky *(Research Institute of Technology, NITI-Russia)*, V.V. Gusarov, V.I. Almiashev *(Institute of Silicate Chemistry-Russia)*, D.B. Lopukh *(SPb. Electrotechnical Univ-Russia)*, D. Bottomley *(ITU-Germany)*, M. Fischer *(AREVA NP GmbH-Germany)*, P. Piluso *(CEA-France)*, A. Miassoedov *(FZK-Germany)*, E. Altstadt *(FZR-Germany)*, F. Fichot *(IRSN-France)*, O. Kymalainen *(FORTUM-Finland)*

3:50 p.m.
European Research on the Corium Issues within the SARNET Network of Excellence, C. Journeau, J.M. Bonnet, L. Godin-Jacqmin, P. Piluso, D. Tarabelli *(CEA-France)*, et al.

CFD Applications to Water, Liquid Metal and Gas Reactors-III, *Session Chair:* Yassin Hassan *(Texas A & M Univ-USA)*

Disney Exhibit Hall Room H
2:30 p.m.
Study on Coolant Mixing in VVER-440 Fuel Assembly Head, S. Tóth, A. Aszódi *(Budapest Univ of Technology and Economics-Hungary)*

2:50 p.m.
Evaluation of the Two-phase Flow Characteristics in the Steam Separator by Using a CFD Code, Masao Chaki, Kenichi Katono *(Hitachi -Japan)*, Hironobu Kataoka, Akio Tomiyama *(Kobe Univ-Japan)*

3:10 p.m.
k-ϵ Modeling Using Modified Nodal Integral Method, Suneet Singh, Rizwan-uddin *(Univ of Illinois at Urbana-Champaign-USA)*

Advances in Two-Phase Flow and Heat Transfer-III, *Session Chair:* Meghan E. Leslie *(Westinghouse-USA)*

Disney Exhibit Hall Room I
2:30 p.m.
Applications of Nanofluids to Enhance LWR Accidents Management in In-vessel Retention and Emergency Core Cooling System, Antoine Chupin, Lin-Wen Hu, Jacopo Buongiorno *(MIT-USA)*

2:50 p.m.
Thermal-fluid Characterization of ZnO Nanofluid for Advanced Nuclear Power Plants, In Cheol Bang *(Tokyo Institute of Technology-Japan)*

3:10 p.m.
Evaluation of Crack Opening Area, Leak Rate and Probabilistic Models in CANTIA, Shripad T. Revankar, Brian Wolf *(Purdue Univ-USA)*, Jovica R. Riznic *(Canadian Nuclear Safety Commission-Canada)*

3:30 p.m.
Condensation Correlation for a Vertical Passive Condenser System, Shripad T. Revankar, Suengmin Oh, Wenzhong Zhou, Gavin Henderson *(Purdue Univ-USA)*

Advanced Fuel Cycles, Recycling, and Actinide Transmutation, *Session Chair:* Temitope Taiwo *(ANL-USA)*

Disney Exhibit Hall Room J
2:30 p.m.
Evaluation of the Possibility of Plutonium and Minor Actinides Transmutation in HWR, Petre Ghitescu, Nineta Balas Ghizdeanu *(Politehnica Univ of Bucharest-Romania)*

2:50 p.m.
Preliminary Analysis by Means of the TRANSURANUS Code of Mixed Oxide Fuel Rod for Gen IV Lead Fast Reactor, F. Vettraino, R. Calabrese, C. Artioli *(ENEA-Italy)*, L. Luzzi *(Politecnico di Milano-Italy)*, V. Sobolev *(SCK-CEN-Belgium)*

3:10 p.m.
Mixed Plutonium Conversion and Actinides Burning in Fast Molten Salt Reactors, Youhei Kamiyama, Yoichiro Shimazu, Tadashi Narabayashi, Masashi Tsuji *(Hokkaido Univ-Japan)*

WEDNESDAY, JUNE 11, 2008 • 4:00 P.M. - 6:00 P.M.

ICAPP '08 Plenary 5: Infrastructure Issues, *Session Chairs:* Thomas Marcille *(LANL-USA)*, Kumiaki Moriya *(Hitachi-Japan)*

Disney South Exhibit Hall
SPEAKERS:
- Pete Lyons *(NRC-USA, Commissioner)*
- Kiyoshi Yamauchi *(MHI-Japan)*
- Kevin Richards *(South Texas Plant, Nuclear Operating Co., VP Units 3&4)*
- Il-Soon Hwang *(Seoul National Univ-Korea)*

THURSDAY • JUNE 12, 2008

7:30 AM – 2:00 PM	**MEETING REGISTRATION**
8:00 AM – 10:00 AM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: PLENARY SESSION #6:** "New Plant Deployment - Lessons Learned"
8:30 AM – 11:30 AM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** (see page 31)
8:30 AM – 11:30 AM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
9:30 AM – 4:30 PM	**TECHNICAL TOUR:** "Jet Propulsion Laboratory (JPL)"
10:00 AM – 12:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** • Advanced Plant Delivery - Meeting Industry Challenges-I • Power Conversion Systems and Non-Electric Applications • Sodium-cooled Fast Reactors (SFR): The Japanese Program • Lead-cooled Fast Reactors (LFR)-I • Hydrogen Production • Reactor Physics Analyses and Applications • Regulatory Oversight of Component Manufacturing • Thermal Hydraulics Measurement and Modeling Fundamentals-I • Thermal Hydraulics of Gas-Cooled Reactor Systems • Materials Issues for Next Generation NPP: Structural Mechanics
1:00 PM – 3:30 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TECHNICAL SESSIONS** • Advanced Plant Delivery - Meeting Industry Challenges-II • Molten- and Liquid-salt-cooled Reactors • Lead-cooled Fast Reactors (LFR)-II • Regulatory Program and Strategies for New Reactor Licensing • Thermal Hydraulics Measurement and Modeling Fundamentals-II • Advanced Reactor Testing and Analysis
1:00 PM – 4:00 PM	**2008 ANS ANNUAL MEETING: TECHNICAL SESSIONS** (see page 31)
1:00 PM – 4:00 PM	**NFSM EMBEDDED TOPICAL MEETING: TECHNICAL SESSION** (see page 63)
1:00 PM – 6:00 PM	**ICAPP 2008 EMBEDDED TOPICAL MEETING: TUTORIAL SESSION** Planning, Cost Estimation, and Construction of Nuclear Power Plants

THURSDAY, JUNE 12, 2008 • 8:00 A.M. - 10:00 A.M.

ICAPP' 08 Plenary 6: New Plant Deployment – Lessons Learned, *Session Chairs:* Nils J. Diaz *(ND2-USA)*, Franck Carre *(CEA-France)*

Disney South Exhibit Hall
SPEAKERS:
- Akira Maru *(Hitachi Power Systems Group-Japan, President and CEO)*
- Michael Johnson *(NRC-USA, Director of the Office of New Reactors)*
- Marv Fertel *(NEI-USA, Executive VP)*
- James Reisch *(Bechtel Nuclear-USA, President and CEO)*
- Art Stall *(FPL-USA, Senior VP and CNO)*
- Harri Tuomisto *(Fortum Nuclear Services Oy-Finland, President)*

THURSDAY, JUNE 12, 2008 • 10:00 A.M. - 12:00 P.M.

Advanced Plant Delivery - Meeting Industry Challenges-I, *Session Chairs:* Richard Swinburn *(Rolls-Royce-United Kingdom)*, Philippe Lauret *(AREVA NP-France)*

Disney Exhibit Hall Room A
10:00 a.m.
Optimization Planning for the Construction of the U.S. EPR, Michael K. Phillips *(AREVA NP-USA)*

10:20 a.m.
Experimental Investigation of Non-condensable Gases Effect on Operation of VVER Steam Generator in Condensation Mode, Alexander D. Efanov, Sergey G. Kalyakin, Andrey V. Morozov, Oleg V. Remizov, Alexander A. Tsyganok *(IPPE-Russia)*, Vladimir N. Generalov, Viktor M. Berkovich, Gennady S. Taranov *(Atomenergoproekt-Russia)*

10:40 a.m.
European Research on Issues Concerning Hydrogen Behaviour in Containment within the SARNET Network of Excellence, Heinz Wilkening *(JRC-The Netherlands)*, Ivo Kljenak *(Jozef Stefan Institute-Slovania)*, Walter Ambrosini *(UNIPI-Italy)*, Ahmed Bentaib *(IRSN-France)*, Laure Blumenfeld, Frederic Dabbene *(CEA-France)*, Jeanne Malet *(IRSN-France)*, Ernst-Arndt Reinecke *(FZJ-Germany)*, Eveliina Takasuo *(VTT-Finland)*, John R. Travis *(FZK-Germany)*

11:00 a.m.
Economic Advantage of the Korea Nuclear Plants by Shortening the Construction Schedule, Kee Cheol Park, Dong Soo Ryu *(KHNP-KOREA)*

Power Conversion Systems and Non-Electric Applications, *Session Chair:* Michael A. Fütterer *(JRC Petten-The Netherlands)*

Disney Exhibit Hall Room B
10:00 a.m.
Alternative Working Fluids to Reduce the Size of Turbomachinery in VHTR Plants, Jean-Michel Tournier, Mohamed S. El-Genk *(Univ of New Mexico-USA)*

10:20 a.m.
Thermo-Economic Performance of HTGR Brayton Power Cycles, José I. Linares *(COMILLAS-Spain)*, Luis E. Herranz *(CIEMAT-Spain)*, Beatriz Y. Moratilla, A. Fernandez-Perez *(COMILLAS-Spain)*

10:40 a.m.
Thermo-Chemical Behavior of a Laboratory Scale SO3 Decomposer, Chan Soo Kim, Sung-Deok Hong, Jong-Ho Kim, Yong-Wan Kim, Won Jae Lee *(KAERI-Korea)*

Sodium-cooled Fast Reactors (SFR): The Japanese Program, *Session Chair:* Jean-Pol Serpantié *(AREVA NP-France)*

Disney Exhibit Hall Room C
10:00 a.m.
Development of Advanced Loop-Type Fast Reactor in Japan (1): Current Status of JSFR Development, Shoji Kotake, Takatsugu Mihara, Shigenobu Kubo, Kazumi Aoto *(JAEA-Japan)*, Mikio Toda *(MFBR-Japan)*

10:20 a.m.
Development of Advanced Loop-Type Fast Reactor in Japan (2): Technological Feasibility of Two-Loop Cooling System in JSFR, Hidemasa Yamano *(JAEA-Japan)*, Shigenobu Kubo *(JAPC-Japan)*, Ken-ichi Kurisaka *(JAEA-Japan)*, Yoshio Shimakawa *(Mitsubishi FBR Systems-Japan)*, Hiromi Sago *(Mitsubishi Heavy Industries-Japan)*

10:40 a.m.
Development of Advanced Loop-Type Fast Reactor in Japan (3): Easy Inspection and High Reliable Reactor Structure in JSFR, Yoshihiko Sakamoto *(JAEA-Japan)*, Shigenobu Kubo *(JAPC-Japan)*, Shoji Kotake *(JAEA-Japan)*, Yoshio Kamishima *(MFBR-Japan)*

11:00 a.m.
Development of Advanced Loop-Type Fast Reactor in Japan (4): An Advanced Design of the Fuel Handling System for the Enhanced Economic Competitiveness, Shinichi Usui, Takatsugu Mihara *(JAEA-Japan)*, Hiroyuki Obata, Shoji Kotake *(JAPC-Japan)*

11:20 a.m.
Development of Advanced Loop-Type Fast Reactor in Japan (5): Adoption of Self-Actuated Shutdown System to JSFR, Shigeyuki Nakanishi, Shigenobu Kubo *(JAPC-Japan)*, Misao Takamatsu *(JAEA-Japan)*, Iwao Ikarimoto, Jungo Kato *(Mitsubishi Heavy Industries-Japan)*, Yoshio Shimakawa *(Mitsubishi FBR Systems-Japan)*, Kiyoshi Harada *(Hitachi-GE Nuclear Energy-Japan)*

11:40 a.m.
Development of Advanced Loop-Type Fast Reactor in Japan (6) Minor Actinide Containing Oxide Fuel Core Design Study for the JSFR, Masayuki Naganuma, Takashi Ogawa, Shigeo Ohki, Tomoyasu Mizuno *(JAEA-Japan)*, Shigenobu Kubo *(JAPC-Japan)*

Lead-cooled Fast Reactors (LFR)-I, *Session Chairs:* James J. Sienicki *(ANL-USA)*, Stefano Monti *(ENEA-Italy)*

Disney Exhibit Hall Room D
10:00 a.m.
Scoping Investigation into Viability of a Lead-Cooled Fast Reactor Demonstration Test Reactor (Demo), James J. Sienicki, Anton Moisseytsev, Constantine P. Tzanos *(ANL-USA)*

10:20 a.m.
A Design and Safety Features of Small CANDLE Fast Reactor, Hiroshi Sekimoto, Mingyu Yan *(Tokyo Institute of Technology-Japan)*

10:40 a.m.
Nuclear Safety Evaluation of a LBE Cooled Transmutation Reactor, PEACER-300, Jae-Yong Lim, Myung-Hyun Kim *(Kyung Hee Univ-Korea)*, Il-Soon Hwang *(Seoul National Univ-Korea)*

11:00 a.m.
Development of Transportable Capsule Version of PEACER Design, Il Soon Hwang, Myung Hyun Kim, Gyu Joo, Kyung Woo Yi, Bong Yoo, Moo Hwan Kim, Seung Rok Oh, Yoon Jae Kim, Jong Gye Shin, Kwang Myung Lee, Sangman Kwak, Jae Yong Lim, Dong Yoon Han, Jun Lim, Ju Dong Bae, Hyo On Nam, Chang Hyo Kim *(NUTRECK, Seoul National Univ-Korea)*

Hydrogen Production, *Session Chairs:* Carl Stoots *(INL-USA)*, Theron Marshall *(INL-USA)*

Disney Exhibit Hall Room E
10:00 a.m.
Initial Operation of the High Temperature Electrolysis Integrated Laboratory Scale Experiment at INL, C.M. Stoots, J.E. O'Brien, K.G. Condie, J.S. Herring *(INL-USA)*, J.J. Hartvigsen *(Ceramatec, Inc-USA)*

10:20 a.m.
Commercial Scale Performance Predictions for High-Temperature Electrolysis Plants Coupled to Three Advanced Reactor Types, J.E. O'Brien, M.G. McKellar, J.S. Herring *(INL-USA)*

10:40 a.m.
Hydrogen Production for Transportation Fuels Using Nuclear Energy, J. Stephen Herring, Keith Condie, James E. O'Brien, Carl M. Stoots *(INL-USA)*, Joseph J. Hartvigsen *(Ceramatec, Inc.-USA)*

11:00 a.m.
Initial Assessment of the Operability of the VHTR-HTE Nuclear Hydrogen Plant, Richard B. Vilim *(ANL-USA)*

11:20 a.m.
Once–through Hybrid Sulfur Process for Nuclear Hydrogen Production, Yong Hoon Jeong *(KAIST-Korea)*

11:40 a.m.
Integrating Large-Scale Co-Generation of Hydrogen and Electricity from Wind and Nuclear Sources (Nuwind™), A.I. Miller, R.B. Duffey *(AECL-Canada)*

Reactor Physics Analyses and Applications, *Session Chair:* Yoichiro Shimazu *(Hokkaido Univ-Japan)*

Disney Exhibit Hall Room F
10:00 a.m.
Validation of Shielding Design for Spent Nuclear Fuel Cask Storage Facility Using Various Codes, Hideo Nakano, Shigeki Nemezawa, Toshihisa Tsukiyama, Yuji Nemoto *(Hitachi-GE Nuclear Energy-Japan)*

10:20 a.m.
Reactor Physics Aspects of the Incident Occurred at Paks NPP in 2003, Sándor Fehér, András Wirth, József Kópházi, Szabolcs Czifrus *(Institute of Nuclear Techniques-Hungary)*

10:40 a.m.
Core Monitoring - Combining Measurements from Different Nuclear Instrumentations, Gérard Rio, Benjamin Battel *(AREVA NP-France)*

11:00 a.m.
Decay Heat Analysis of a VHTR Core using HELIOS and ORIGNE-2 Codes, Jae Man Noh, Kang-Mok Bae *(KAERI-Korea)*

11:20 a.m.
Criticality Calculations on Realistic Modeling of Pebble-bed HTR-PROTEUS as a Validation for the Woodcock Tracking Method Implemented in the MORET 5 Monte Carlo Code, Benoit Forestier, Joachim Miss *(IRSN-France)*, Olivier Jacquet *(Consultant-France)*, Franck Bernard *(IRSN-France)*, Bernard Verboomen *(National Institute for Radioisotopes-Belgium)*

11:40 a.m.
Optimal Control Search of Xenon Oscillation Control in Large PWRs Using a Characteristic Ellipse Trajectory Drawn by Three Axial Offsets, Youichiro Shimazu *(Hokkaido Univ-Japan)*

Regulatory Oversight of Component Manufacturing, *Session Chair:* Glenn Tracy *(USNRC-USA)*

Disney Exhibit Hall Room G
PANELISTS:
10:00 a.m.
Regulatory Oversight of Component Manufacturing in the U.S., Juan Peralta *(USNRC-USA)*

10:20 a.m.
Regulatory Oversight of Component Manufacturing in France, Sebastien Limousin *(ASN-France)*

10:40 a.m.
Regulatory Oversight of Component Manufacturing in Korea, Sungho Yang *(KINS-Korea)*

11:00 a.m.
Special Treatment for Important to Safety Structures, Systems and Components (SSCs) in the Licensing of Light Water Reactors, Richard W. McNally *(USNRC-USA)*

Thermal Hydraulics Measurement and Modeling Fundamentals-I, *Session Chair:* Seungjin Kim *(The Pennsylvania State Univ-USA)*

Disney Exhibit Hall Room H
10:00 a.m.
Supercritical Water Heat Transfer in a Vertical Bare Tube: Normal, Improved and Deteriorated Regimes, I.L. Pioro *(Univ of Ontario Institute of Technology-Canada)*, P.L. Kirillov *(IPPE-Russia)*, S.J. Mokry, Y.K. Gospodinov *(Univ of Ontario Institute of Technology-Canada)*

10:20 a.m.
LWR Containment Safety Research in PANDA, D. Paladino, M. Huggenberger, M. Andreani, S. Gupta, S. Guentay, J. Dreier, H. Prasser *(PSI-Switzerland)*

10:40 a.m.
Interfacial Area Transport in Horizontal Bubbly Flow with Elbow Restrictions, Justin Talley, Seungjin Kim *(The Pennsylvania State Univ-USA)*, Gunol Kojasoy *(Univ of Wisconsin-Milwaukee-USA)*

11:00 a.m.
High Temperature Irradiation Resistant Thermocouples – A Low Cost Sensor for In-Pile Testing at High Temperatures, Darrell L. Knudson, Joy L. Rempe, Keith G. Condie *(INL-USA)*, S. Curtis Wilkins *(Consultant-USA)*, Joshua E. Daw, John C. Crepeau *(Univ of Idaho-USA)*

11:20 a.m.
Analysis of Two-Phase Flow and Boiling Heat Transfer in Inclined Channel of Core-catcher, M. Tahara, Y. Suzuki, N. Abe, T. Kurita, R. Hamazaki, Y. Kojima *(Toshiba-Japan)*

11:40 a.m.
Performance and Scaling Analysis for the Two-Phase Natural Circulation, JinHo Song *(KAERI-Korea)*

Thermal Hydraulics of Gas-Cooled Reactor Systems, *Session Chair:* Genevieve Geffraye *(CEA-France)*

Disney Exhibit Hall Room I
10:00 a.m.
Investigation of Heat Transfer for Gas Cooled Systems, Wolfgang Hering, Frederik Arbeiter, Andrei Bologa, Angela Jianu, Jurong Zhuang *(FZK-Germany)*

10:20 a.m.
Mixing Process by Natural Convection and Molecular Diffusion of Two Component Gases in a Stable Stratified Fluid Layer, Tetsuaki Takeda *(Univ of Yamanashi-Japan)*

10:40 a.m.
Design Considerations For Compact Heat Exchangers, David Southall, Renaud Le Pierres, Stephen John Dewson *(Heatric Division of Meggitt-UK)*

Materials Issues for Next Generation NPP: Structural Mechanics, *Session Chair:* Kunihiro Itoh *(Nuclear Development Corp-Japan)*

Disney Exhibit Hall Room J

10:00 a.m.
Study on an Innovative Fast Reactor Utilizing Hydride Neutron Absorber, Kenji Konashi, Tomohiko Iwasaki *(Tohoku Univ-Japan)*, Kunihiro Itoh *(NDC-Japan)*, Mutsumi Hirai *(NFD-Japan)*, Ikken Sato *(JAEA-Japan)*, Ken Kurosaki *(Osaka Univ-Japan)*, Akihiro Suzuki *(Univ of Tokyo-Japan)*, Yoshihito Matsumura *(Tokai Univ-Japan)*, Yoshihisa Tahara *(EDC-Japan)*

10:20 a.m.
Comparison of Inelastic Behaviors Between Cold Worked 316L and Solution Annealed 316L Stainless Steels, J.B. Kim, H.Y. Lee, C.G. Park, J.H. Lee *(KAERI-Korea)*

10:40 a.m.
Effects of Alloying Elements on Microstructure and Mechanical Properties in SA508 Gr.4N Low Alloy Steel, Min-Chul Kim, Sang-Gyu Park, Yoon-Sun Lee, Bong-Sang Lee *(KAERI-Korea)*

11:00 a.m.
Effects of Welding on Toughness of Mod.9Cr-1Mo Steel, Woo-Seog Ryu, Sung-Ho Kim, Ji-Hyun Yoon *(KAERI-Korea)*

11:20 a.m.
Development of Digital Materials Database for Design and Construction of New Power Plants, Weiju Ren *(ORNL-USA)*

THURSDAY, JUNE 12, 2008 • 1:00 P.M. - 3:00 P.M.

Advanced Plant Delivery - Meeting Industry Challenges-II, *Session Chairs:* Philippe Lauret *(AREVA NP-France)*, Richard Swinburn *(Rolls-Royce-United Kingdom)*

Disney Exhibit Hall Room B
1:00 p.m.
Study on High Conversion Type Core of Flexible Fuel Cycle (FLWR) for Minor Actinide (MA) Recycling, Y. Fukaya, Y. Nakano, T. Okubo *(JAEA-Japan)*

1:20 p.m.
A Review of Dopants Used to Increase UO2 Burnup Capabilities by Grain Size Modification, Brett Dooies, Samim Anghaie *(Univ of Florida-USA)*

1:40 p.m.
A Comparative Evaluation of Pressurizer Surge Line Thermal Loads, T. Pournaras, T. Wiley, J. Smouse, R. Brice-Nash, S.A. Swamy *(Westinghouse-USA)*

Molten- and Liquid-salt-cooled Reactors, *Session Chair:* Charles Forsberg *(MIT-USA)*

Disney Exhibit Hall Room C
1:00 p.m.
Reactor Physical Program in the Frame of the MSR-SPHINX Transmuter Concept Development, Miloslav Hron, Miroslav Mikisek *(NRI Rez-Czech Republic)*

1:20 p.m.
Design Options for the Advanced High-Temperature Reactor, C.W. Forsberg *(MIT, ORNL-USA)*, P.F. Peterson *(Univ of California at Berkeley-USA)*, R.A. Kochendarfer *(AREVA NP-USA)*

1:40 p.m.
Use of a Liquid Salt Nuclear Reactor to Transmute Minor Actinides, K.O. Stein, R.A. Kochendarfer, J.W. Maddox *(AREVA Federal Services-USA)*

2:00 p.m.
Designing the Advanced High-Temperature Reactor for Low Radionuclide Releases in a Beyond-Design-Basis Accidents, Charles W. Forsberg *(MIT, ORNL-USA)*

Lead-cooled Fast Reactors (LFR)-II, *Session Chairs:* James J. Sienicki *(ANL-USA)*, Stefano Monti *(ENEA-Italy)*

Disney Exhibit Hall Room D
1:00 p.m.
Design and Analysis of 900 MWt Lead-Cooled Fast Reactor, Sang Ji Kim, Yonghee Kim, Sergi Hong, Choong Ho Cho, Jae-hyuk Eoh, Jong Bum Kim, Myung Hwan Wi, Kwi Seok Ha, Eui Gwang Kim *(KAERI-Korea)*

1:20 p.m.
A 2400 MWth Liquid Lead-Cooled Flexible Conversion Ratio (FCR) Reactor, A. Nikiforova, P. Hejzlar, N. Todreas, C. J. Fong *(MIT-USA)*

1:40 p.m.
Corrosion Test of Cr- and Al-containing Alloys in Static LBE at 550 °C, Jun Lim, Hyo On Nam, Il Soon Hwang *(Seoul National Univ-Korea)*

2:00 p.m.
Comparison of the Hydraulics in Concentric and Three Feeder XT-ADS Windowless Spallation Target Designs, F. Roelofs, N.B. Siccama, B. de Jager *(NRG-The Netherlands)*, K. van Tichelen, M. Dierckx, J. Heyse, K. Rosseel, P. Schuurmans *(SCK-CEN-Belgium)*

2:20 p.m.
Application of a Controlled Swirl in the XT-ADS Spallation Target, F. Roelofs, N.B. Siccama *(NRG-The Netherlands)*, H. Jeanmart *(Univ Catholique de Louvain-Belgium)*, K. van Tichelen, M. Dierckx, P. Schuurmans *(SCK-CEN-Belgium)*

Regulatory Program and Strategies for New Reactor Licensing, *Session Chair:* Patrick Madden *(USNRC-USA)*

Disney Exhibit Hall Room G
1:00 p.m.
Regulatory Change - Regulations, Guidance, and Process Improvements, Steven Koenick *(USNRC-USA)*

1:20 p.m.
Design Centered Review Approach - Strategies for Success - Planning, Scheduling and Resource Management, Steve Bloom *(USNRC-USA)*

1:40 p.m.
Expectations vs. Reality, Doug Weaver *(USNRC-USA)*

2:00 p.m.
United Kingdom's New Build Licensing Strategy, *(UK TBD, NII)*

2:20 p.m.
Competitive Paths to New Plant Licensing, Alexander Restrepo, Samim Anghaie *(Univ of Florida-USA)*

Thermal Hydraulics Measurement and Modeling Fundamentals-II, *Session Chair:* Seungjin Kim *(The Pennsylvania State Univ-USA)*

Disney Exhibit Hall Room H
1:00 p.m.
Development of the Cooling Technology on TRU Fuel Pin Bundle during Fuel Fabrication Process (1) Whole Study Plan and Fabrication of Test Apparatuses, Kunihiro Itoh, Kazuo Ikeda *(Nuclear Dev Corp-Japan)*, Koichi Hishida, Taichiro Kuroda *(Keio Univ-Japan)*, Akira Yamaguchi, Takashi Takata *(Osaka Univ-Japan)*

1:20 p.m.
Development of the Cooling Technology on TRU Fuel Pin Bundle during Fuel Fabrication Process (2) High-Speed PIV Measurements in Gap among Fuel Pins, Koichi Hishida, Taichiro Kuroda *(Keio Univ-Japan)*, Kunihiro Itoh, Kazuo Ikeda *(NDC-Japan)*, Akira Yamaguchi, Takashi Takata *(Osaka Univ-Japan)*

1:40 p.m.
Development of the Cooling Technology on TRU Fuel Pin Bundle during Fuel Fabrication Process (3) Development of Analytical Tool, Takashi Takata, Akira Yamaguchi *(Osaka Univ-Japan)*, Akira Hishida, Taichiro Kuroda *(Keio Univ-Japan)*, Kunihiro Itoh, Kazuo Ikeda *(NDC-Japan)*

2:00 p.m.
An Assessment of Large-Eddy Simulation for Thermal Fatigue Prediction, Arkadiusz K. Kuczaj, Bram de Jager, Ed Komen *(NRG-The Netherlands)*

2:20 p.m.
Experimental Investigation of Crud Deposition under Sub-cooled Boiling Conditions, H. Bindra, Q. Rao, B.G. Jones *(Univ of Illinois at Urbana Champaign-USA)*

Advanced Reactor Testing and Analysis, *Session Chair:* Nusret Aksan *(PSI-Switzerland)*

Disney Exhibit Hall Room I
1:00 p.m.
Subchannel Analysis of CANDU-SCWR Fuel, Changying Li, Jianqiang Shan *(Xi'an Jiaotong Univ-China)*, Laurence K.H. Leung *(AECL-Canada)*

1:20 p.m.
GNF2 Counter-Current Flow Limitation Testing, P.R. Diller, D. Abdollahian, J.G.M. Andersen *(Global Nuclear Fuel, GE-Hitachi Nuclear Energy-USA)*

1:40 p.m.
Interfacial Momentum Exchange Models Used in Nuclear Reactor System Analysis Codes, J.-W. Park, B.-D. Chung *(KAERI-Korea)*

2:00 p.m.
Thermohydrodynamic Analysis of Reactor Vessel Auxiliary Cooling System for Lead-Cooled Battery Omnibus Reactor Integral System, Hyung M. Son, Kune Y. Suh *(Seoul National Univ-Korea)*

2:20 p.m.
Development of High Fidelity System Analysis Code for GEN IV Reactors, Hongbin Zhang, Vincent A. Mousseau, Haihua Zhao *(INL-USA)*

2:40 p.m.
Multidimensional Analysis of Developing Two-phase Flows in an ESBWR Chimney with and without Riser Channels, Hideki Murakawa *(Kobe Univ-Japan)*, Steven P. Antal, Richard T. Lahey, Jr. *(Rensselaer Polytechnic Institute-USA)*

THURSDAY, JUNE 12, 2008 • 1:00 P.M. - 6:00 P.M.

Planning, Cost Estimation and Construction of Nuclear Power Plants-Tutorial, *Session Chairs:* Nils J. Diaz *(ND2-USA)*, Samim Anghaie *(Univ of Florida-USA)*

Magic Kingdom Ballroom 2 & 3
The Tutorial session will include three case studies with detailed information on planning, cost estimation and construction of the last completed plant, an under construction plant, and future plant. The tutorial is free of charge.

GENERAL CHAIR:
Wynn A. Volkert
University of Missouri-Columbia

TECHNICAL PROGRAM CHAIR:
Ralph A. Butler
University of Missouri-Columbia

Isotopes for Medicine and Industry Embedded Topical Meeting is sponsored by the following ANS divisions: Isotopes and Radiation and Biology and Medicine

A special thank you to the DOE Isotope Program and the Missouri University Research Reactor Center for their generous sponsorship of the Isotopes for Medicine and Industry Embedded Topical Meeting.

DATE/TIME	ROOM			
	Adventure Ballroom	Adventure A	Adventure B	Adventure C
MONDAY, JUNE 9, 2008 3:00 PM	Opening Plenary: Radioisotopes—The 21st Century			
TUESDAY, JUNE 10, 2008 8:30 AM		Applications in Nuclear Medicine—Diagnostics	Production and Application of Alpha Emitters	R&D and Standards Needs for Future Applications in Industry
1:00 PM		Isotopes in Environmental, Industrial, and Nuclear Power Applications	Applications in Nuclear Medicine—Therapeutics	Cyclotron Production of Biomedical Tracers
WEDNESDAY, JUNE 11, 2008 8:30 AM		Reactor Production of Research and Industrial Isotopes	Radiochemistry	High Energy Accelerator/ Cyclotron Production of Isotopes
1:00 PM		Reactor Production of Medical Isotopes	Distribution and Transportation Issues	Manpower and Education

MONDAY, JUNE 9, 2008 • 3:00 P.M.

Opening Plenary: Radioisotopes—The 21st Century. *Chair:* Wynn Volkert *(Univ of Missouri)*

Adventure Ballroom
3:00 p.m.
SPEAKERS:

- Radioisotopes for Medicine in Developing Countries, N. Ramamoorthy *(IAEA)*, invited
- The Status of Developments in Nuclear Fuel Processing, Greg Choppin *(Florida State Univ)*, invited
- Advancing Nuclear Medicine Through Innovation: Review of NAS, Peter Conti *(Univ of Southern California)*, invited

Representative from DOE to be determined.

TUESDAY, JUNE 10, 2008 • 8:30 A.M.

Applications in Nuclear Medicine—Diagnostics. *Cochairs:* Wynn Volkert *(Univ of Missouri)*, Michael Welch *(Washington Univ)*

Adventure A
8:30 a.m.
Radiometalled SPECT Cancer Specific Imaging Radiopharmaceuticals, W. A. Volkert, T. J. Hoffman, T. P. Quinn, C. J. Smith *(Univ of Missouri, Columbia)*

8:55 a.m.
^{68}Ga-Bombesin Antagonist for Imaging Prostate Cancer, Brienne N. Bottenus *(Harry S Truman VA Hospital)*, Jered C. Garrison *(Univ of Missouri, Columbia)*, Tammy L. Rold, Gary L. Sieckman *(Harry S Truman VA Hospital)*, Said D. Figueroa *(Univ of Missouri, Columbia)*, Samantha V. Sublett *(Harry S Truman VA Hospital)*, Hendrik Engelbrecht, Cathy S. Cutler, Silvia S. Jurisson *(Univ of Missouri, Columbia)*, Timothy J. Hoffman *(Harry S Truman VA Hospital)*

9:20 a.m.
PET Strategies to Select Patients for Experimental Cancer Therapy, Kenneth A. Krohn, Jeanne M. Link, David A. Mankoff *(Univ of Washington)*, Finbarr O'Sullivan *(Univ College Cork)*, Joseph G. Rajendran, Alexander M. Spence, Jonathan F. Tait, Janet F. Eary *(Univ of Washington)*, invited

9:45 a.m.
New Imaging Technologies in Early Health, Jean-Luc Vanderheyden *(GE Healthcare)*, invited

10:10 a.m.
^{41}Ca: A New Tool for Bone Health Assessment, Darren J. Hillegonds, John S. Vogel, David A. Herold, Leonard J. Deftos, Robert L. Fitzgerald *(LLNL)*

10:35 a.m.
Molecular Imaging of the Sentinel Lymph Node, David R. Vera, Carl K. Hoh, Jeanette Méndez, Anne M. Wallace *(Univ of California, San Diego)*, invited

11:00 a.m.
Production of Fission Product Molybdenum 99 at the University of Missouri Research Reactor Center, Ralph A. Butler *(Univ of Missouri, Columbia)*

Production and Application of Alpha Emitters. *Cochairs:* Darrel Fisher *(PNNL)*, Scott Wilbur *(Univ of Washington)*

Adventure B
8:30 a.m.
U-232/Th-228 Progeny as Examples of Generator Supported Alpha-Emitting Radionuclides with Potential for Radiotherapeutic Applications, Herbert Moore, Richard Testa *(AlphaMed Inc.)*, Dennis Wester *(PNNL)*, Thomas Quinn *(Univ of Missouri, Columbia)*, Yubin Miao *(Univ of New Mexico)*

8:55 a.m.
Astatine-211 Production, Distillation and Labeling at the University of Washington, D. Scott Wilbur, Donald K. Hamlin, Ruedi Risler *(Univ of Washington)*, invited

9:20 a.m.
Production and Use of the Alpha Emitter Radium-223 in Cancer Treatment, G. Salberg *(Algeta ASA)*, B. Farstad *(Inst for Energy Technol)*, Ø. Bruland, R. Larsen *(Norwegian Radium Hospital)*

9:55 a.m.
Production of Thorium-229 at the ORNL High Flux Isotope Reactor, Rose A. Boll, Marc A. Garland, Saed Mirzadeh *(ORNL)*

10:20 a.m.
Retention of Radium-225 and Its Daughter Radioisotopes in Bone, Saed Mirzadeh, Marc Garland *(ORNL)*, Steve Kennel *(Univ of Tennessee)*

R&D and Standards Needs for Future Applications in Industry. *Chair:* Kenneth Inn *(NIST)*

Adventure C
8:30 a.m.
In Vivo and In Vitro Radiobioassay, Gary H. Kramer *(Health Canada)*

8:55 a.m.
Measurement of Long-Lived Radionuclides in Low and Intermediate Level Wastes: Development of New Validation Strategies, C. Fréchou, I. Laszak *(CEA)*

9:20 a.m.
ASTM Rapid Methods Task Group—A Volunteer Response to a Publicly-Defined Need, Doug Van Cleef *[Advanced Measurement Technology, Inc. (ORTEC)]*

9:55 a.m.
Reference Materials for Nuclear Forensics Quality Assurance, Stephen P. LaMont, Robert E. Steiner *(LANL)*, Kenneth Inn *(NIST)*, Steven Goldberg *(New Brunswick Laboratory)*, Jeffrey Liggett *(FBI)*

TUESDAY, JUNE 10, 2008 • 1:00 P.M.

Isotopes in Environmental, Industrial, and Nuclear Power Applications. *Chair:* Heino Nitsche *(Univ of California, Berkeley)*

Adventure A
1:00 p.m.
Use of Ni-63 in a Nanopore/Nanotube Radioisotope Battery, George H. Miley, Richard Masel, Jin R. Lee, Ben Ulmen, Hugo Leon, Saeed Moghaddam, Priya Desai *(Univ of Illinois)*

1:25 p.m.
Thermal Properties of Cermets Fuels for P&T Concepts, D. Staicu, J.-P. Hiernaut, J. Somers, A. Fernandez, C. Nastren, R. Konings, V. V. Rondinella *(European Commission, JRC, ITU)*

1:50 p.m.
Factors Affecting the Stability of Matrix Materials for Actinides Transmutation and Conditioning, V. V. Rondinella, T. Wiss, J.-P. Hiernaut *(European Commission, JRC, ITU)*, S. Lutique *(European Commission, JRC, ISD)*, P. Raison, D. Staicu *(European Commission, JRC, ITU)*, W. Weber *(PNNL)*, T. Fanghänel *(European Commission, JRC, ITU)*

2:15 p.m.
Separation of Technetium from Uranium via Solvent Extraction with Tributylphosphate, Cynthia-May S. Gong *(Harry Reid Center for Environmental Studies, UNLV)*, Kenneth R. Czerwinski *(UNLV)*

Applications in Nuclear Medicine—Therapeutics. *Cochairs:* Cathy Cutler *(Univ of Missouri)*, David Colcher *(City of Hope, Beckman Research Inst)*

Adventure B
1:00 p.m.
Scandium-DOTA Complex for a New PET/3γ Camera for Medical Applications and Radio Labeling Studies, S. Huclier-Markai, G. Montavon, B. Grambow *(Laboratoire Subatech)*, A. Faivre-Chauvet, J. Barbet *(Inserm)*

1:25 p.m.
IAEA Activities on Radioisotopes and Radiopharmaceuticals for Radionuclide Therapy, M. R. A. Pillai, John J. Zaknun, M. Haji-Saeid, N. Ramamoorthy *(IAEA)*

1:50 p.m.
^{177}Lu Specific Activity Influence Over DOTATATE Radiolabeling: Experimental Data, Stefano Papi, Lucia Garaboldi, Luigi Martano, Giovanni Paganelli, Marco Chinol *(European Inst of Oncology)*

2:15 p.m.
Radiolabeled Antibodies as Targeting Agents for Imaging and Therapy: What Radionuclide(s) to Use?, David Colcher *(City of Hope)*, invited

2:40 p.m.
Preparation and Use of Carrier Free ^{105}Rh, Beau Ballard, Hendrik Engelbrecht, Cathy Cutler, Silvia Jurisson *(Univ of Missouri, Columbia)*

3:05 p.m.
Preparation and Use of Carrier Free ^{161}Tb, Chandrika Somashekar, Bradley Spatola, Stacy Wilder, Melchor Cantorias, Silvia Jurisson, Cathy Cutler *(Univ of Missouri, Columbia)*

3:30 p.m.
In Vitro Evaluation of ^{177}Lu Antisense Radiotherapy, Ethan R. Balkin, Fang Jia, William H. Miller, Michael R. Lewis *(Univ of Missouri, Columbia)*

Cyclotron Production of Biomedical Tracers. *Cochairs:* Henry VanBrocklin *(Univ of California, San Francisco)*, Jeanne Link *(Univ of Washington)*

Adventure C
1:00 p.m.
Radionuclide/Radiopharmaceutical Quality for Human Research, David W. Dick *(Stanford)*

1:25 p.m.
Radiochemistry Challenges in Preclinical Molecular Imaging, David Stout *(UCLA)*

1:50 p.m.
Radionuclide Resource for Cancer Applications: Progress at Washington University St. Louis, Michael J. Welch *(Washington Univ, St. Louis)*

2:15 p.m.
Alternative Strategies for Production of PET Radionuclides, Kenneth A. Krohn, Jeanne M. Link *(Univ of Washington)*, invited

2:40 p.m.
Batch Preparation of Multiple Biomarkers Using Microfluidics, Anthony M. Giamis, Joseph C. Matteo *(Advion BioSystems)*

WEDNESDAY, JUNE 11, 2008 • 8:30 A.M.

Reactor Production of Research and Industrial Isotopes. *Cochairs:* Chris Heysel *(McMaster Univ)*, Frances Marshall *(INL)*

Adventure A
8:30 a.m.
Californium in the 21st Century: Ensuring a Secure Future, Julie G. Ezold, D. Mitch Ferren *(ORNL)*

8:55 a.m.
Production of ^{35}S for a Liquid Semiconductor Betavoltaic, D. E. Meier, A. Y. Garnov, J. D. Robertson *(Univ of Missouri, Columbia)*, F. Tsang, T. McIsaac, J. Molstad *(Global Technologies, Inc.)*

9:20 a.m.
Crystalline Inorganic Ion Exchanger for Rhenium-188 Generator, N. Bestaoui-Spurr, A. Cisar, T. Adams *(Lynntech, Inc.)*, J. M. Cosgrove, F. F. Knapp Jr. *(ORNL)*

9:45 a.m.
Brighter Prospects for Nuclear Medicine Practice in Chile, Rosemarie Schrader Früh *(Comision Chilena de Energia Nuclear)*, Nigel Mote *(International Nuclear Consultants)*, Pablo Adelfang *(IAEA)*

10:10 a.m.
Beta Sources for 2D Betavoltaic Radioisotope Micro Power Sources, J. D. Brockman, A. Y. Garnov, D. E. Meier, J. D. Robertson *(Univ of Missouri, Columbia)*, C. Eiting, V. Krishnamoorthy *(Qynergy Corporation)*

10:35 a.m.
MURR-Production and Promotion of Radioisotopes for Medical Applications Since 1966, Alan R. Ketring, Cathy S. Cutler, Gary J. Ehrhardt *(Univ of Missouri, Columbia)*

Radiochemistry. *Chair:* David DiPrete *(SRNL)*

Adventure B
8:30 a.m.
Radionuclide Sorption to Soils/Rocks Underlying Proposed Nuclear Power Plants, Daniel I. Kaplan, David P. DiPrete *(SRNL)*

8:55 a.m.
The ERAWAST Initiative—a New Approach for Isotope Production, Dorothea Schumann, Jörg Neuhausen *(Paul Scherrer Inst)*

9:20 a.m.
Determination of Complexation Constants between Inorganic Ligands and At(I) and At(III) Species Present at Ultra-Trace Concentrations, J. Champion, S. Huclier *(Laboratoire Subatech)*, D. Deniaud, K. Julienne, N. Galland, E. Renault *(Laboratoire CEISAM UMR CNRS 6230)*, Z. Asfari *(Laboratoire de Chimie Analytique et Minérale)*, C. Alliot, M. Cherel *(INSERM)*, G. Montavon *(Laboratoire Subatech)*

9:45 a.m.
Increasing the Specific Activity of Medically Useful Radionuclides through Szilard Chalmers Reaction, B. S. Tomar, O. M. Steinebach, P. Bode, H. Th. Wolterbeek *(Delft UT)*

10:10 a.m.
Neutron Activation Analysis Applications at the Savannah River Site Using an Isotopic Neutron Source, M. A. Malek, C. C. DiPrete, T. P. Eddy, D. P. DiPrete *(SRNL)*

10:35 a.m.
Advances in ^{79}Se Analyses on Savannah River Site Radioactive Waste Matrices, D. P. DiPrete, C. C. DiPrete *(SRNL)*

High Energy Accelerator/Cyclotron Production of Isotopes. *Cochairs:* Tom Ruth *(TRIUM)*, Leonard Mausner *(BNL)*

Adventure C
8:30 a.m.
Isotope Production with Intense 100 MeV Proton Beams: Targetry Challenges, F. Meiring Nortier *(LANL)*

8:50 a.m.
Medical Isotopes Production Analyses of the Kharkov Electron Driven Subcritical Assembly, Alberto Talamo, Yousry Gohar *(ANL)*

9:10 a.m.
ARRONAX, a High Energy and High Intensity Cyclotron for Nuclear Medicine, Ferid Haddad *(Université de Nantes)*

9:30 a.m.
Possible PET Isotope Production Using Linear Deuteron Accelerators, P. Volkovitsky, D. M. Gilliam *(NIST)*

9:50 a.m.
Target Design and Chemistry Challenges at the Brookhaven Linac Isotope Producer, L. F. Mausner *(BNL)*, invited

10:10 a.m.
Medical Isotope Production Using A 60 MeV Linear Electron Accelerator, Y. Danon, R. C. Block *(RPI)*, R. Testa, H. Moore *(AlphaMed Inc.)*

10:30 a.m.
Production of ^{86}Y at the Brookhaven Linac Isotope Producer, Dmitri G. Medvedev, Leonard F. Mausner *(BNL)*

10:50 a.m.
Expansion of Radionuclide Production Facilities of iThemba LABS, C. Naidoo, G. F. Steyn *(iThemba LABS)*

11:10 a.m.
The Department of Energy's Isotope Program, W. Runde *(LANL)*

WEDNESDAY, JUNE 11, 2008 • 1:00 P.M.

Reactor Production of Medical Isotopes. *Cochairs:* Alan Ketring *(Univ of Missouri)*, Marc Garland *(ORNL)*

Adventure A

1:00 p.m.
Production of Sn-117m in the BR2 and HFIR High-Flux Reactors, B. Ponsard *[SCK/CEN (Belgian Nuclear Research Centre)]*, M. A. Garland, F. F. (Russ) Knapp Jr., S. Mirzadeh *(ORNL)*, S. C. Srivastava, L. F. Mausner *(BNL)*

1:25 p.m.
Development of Large-scale Iodine-125 Production at UC Davis's MNRC, Mohamed Boussoufi, Robert G. Flocchini, Manuel C. Lagunas-Solar, H. Ben Liu, Walter Steingass *(Univ of California, Davis)*

1:50 p.m.
Comparison of Methods to Produce High Specific Activity Radiolanthanides, Cathy S. Cutler, Hendrik Engelbrecht, Mary Embree, Stacy Wilder, Melchor Cantorias, Alan Ketring *(Univ of Missouri, Columbia)*

2:15 p.m.
Separation of Carrier-free ^{177}Lu from Ytterbium, Renata Mikolajczak, Dariusz Pawlak, Marzena Zuchlinska, Jozef L. Parus *(Inst of Atomic Energy, POLATOM)*

2:40 p.m.
Reactor Production and Applications of Radionuclides for Use in Formulating Novel Radiopharmaceuticals—Experience at BARC, India, Meera Venkatesh, Sharmila Banerjee, Grace Samuel *(Bhabha Atomic Research Centre)*

3:05 p.m.
Assuring Reliable Supplies of Isotopes through Research Reactor Coalitions, Umar Salikhbaev, Peter Chakrov *(Inst of Nuclear Physics)*, Kevin Alldred *(International Nuclear Enterprise Group, LLC)*, Ira Goldman *(IAEA)*

3:30 p.m.
Development of ANS Standard 19.12, Nuclear Data for Isotope Production Calculations for Medical and Other Applications, Marc A. Garland, Saed Mirzadeh *(ORNL)*, Robert E. Schenter *(Smart Bullets, Inc.)*

Distribution and Transportation Issues. *Cochairs:* Roy Brown *(Council on Radionuclides & Radiopharmaceuticals)*, Mike Kilfoil *(Univ of Missouri)*

Adventure B

1:00 p.m.
Preparing for the Regulatory Obsolescence of DOT Specification Packaging, Michael A. Flagg *(Univ of Missouri Research Reactor)*

1:25 p.m.
NRC Regulation of NARM: Noncommercial Distribution of PET Radioactive Drugs, Donna-Beth Howe *(NRC)*

1:50 p.m.
Denial of Shipments of Radioactive Materials, Paul Gray *(MDS Nordion)*, Scott Surovi *(Covidien)*

2:15 p.m.
Case Studies from the U.S. Department of Energy Radiological Triage Program, David J. Mercer *(LANL)*

2:40 p.m.
Industry Initiatives on Transportation of Radioactive Material, Scott J. Surovi *(Covidien)*, Roy W. Brown *[Council on Radionuclides & Radiopharmaceuticals (CORAR)]*, invited

3:05 p.m.
Industry Challenges with Recent Import/Export Regulations, John J. Miller *(International Isotopes, Inc.)*, Marc-Andre Charette *(Council on Radiochemicals and Radiopharmaceuticals)*, Kate Roughan *(QSA Global)*

3:30 p.m.
Security Measures for Category 1 & 2 Radioactive Sources, Kate Roughan *(QSA Global)*, John Miller *(International Isotopes)*

Manpower and Education. *Chair:* Silvia Jurisson *(Univ of Missouri)*

Adventure C

1:00 p.m.
Reversing the Trend: Nuclear and Radiochemistry at the University of Missouri, J. David Robertson, Silvia J. Jurisson, Susan Z. Lever *(Univ of Missouri, Columbia)*

1:25 p.m.
Graduate Training in Imaging Sciences at Washington University in St. Louis, Carolyn J. Anderson *(Washington Univ School of Medicine)*, Michael J. Welch *(Washington Univ, St. Louis)*

1:50 p.m.
Is There a Crisis in Nuclear and Radiochemistry Education in the U.S.?, Heino Nitsche *(Univ of California, Berkeley)*, invited

2:15 p.m.
Filling the "Isotope Specialist" Pipeline: The Washington State University Approach, Kenneth L. Nash, Sue B. Clark, Paul Benny, Aurora Clark, Donald Wall, Nathalie Wall, James Elliston *(Washington State Univ)*, invited

2:40 p.m.
A Perspective on National Needs for Nuclear Medicine, Robert W. Atcher *(LANL)*

GENERAL CO-CHAIR:
Todd Allen
University of Wisconsin-Madison

GENERAL CO-CHAIR:
Lance L. Snead
Oak Ridge National Laboratory

Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors Embedded Topical Meeting is sponsored by the following ANS divisions: Materials Science and Technology and Fusion Energy

DATE/TIME	ROOM	
	Grand Ballroom North	Grand Ballroom South
TUESDAY, JUNE 10, 2008 8:15 AM	Plenary	
10:45 AM	Reactor Designs	
1:30 PM	Leveraging Materials Progress for Next Generation Reactors	
3:15 PM	Advances in Modeling	
WEDNESDAY, JUNE 11, 2008 8:30 AM	Fuels—I	
10:45 AM	Fuels—II	
1:30 PM	Materials—I	
3:15 PM	Materials—II	
7:00 PM		Poster Session—I
8:00 PM		Poster Session—II
THURSDAY, JUNE 12, 2008 8:30 AM	Emerging Concepts	
10:45 AM	Materials—III	
1:30 PM	Fuels—III	
3:15 PM	Corrosion	
4:55 PM	Closing Remarks	

TUESDAY, JUNE 10, 2008 • 8:15 A.M.

Plenary. *Session Organizer:* Lance Snead *(ORNL). Cochairs:* Lance Snead, Todd Allen *(Univ of Wisconsin)*

Grand Ballroom North
8:15 a.m.
Welcome, Lance Snead *(ORNL)*, Todd Allen *(Univ of Wisconsin)*

8:30 a.m.
The Global Nuclear Energy Partnership Program, Buzz Savage *(DOE)*

9:10 a.m.
Innovative Reactor Systems and Requirements for Structural Materials, Frank Carré, Pascal Yvon *(CEA)*

9:50 a.m.
Introduction to the Anatomy of Proactivity, Roger W. Staehle *(Consultant)*

TUESDAY, JUNE 10, 2008 • 10:45 A.M.

Reactor Designs. *Session Organizer:* Lance Snead *(ORNL). Cochairs:* Paschal Yvon *(CEA)*, Steven J. Zinkle *(ORNL)*

Grand Ballroom North
10:45 a.m.
Design and Materials Qualification Program for the PBMR, Mark N. Mitchell *(PBMR)*, Willem Kriel *(Westinghouse PBMR)*, Kobus Smit, Mary Fechter, Shahed Fazluddin *(PBMR)*

11:05 a.m.
Prismatic Gas-cooled Reactor Designs and Materials Challenges, Dominique Hittner, Lew Lommers *(AREVA NP)*

11:25 a.m.
Preservation of FFTF Testing, Design, and Operating Information, Scott Butner, David W. Wootan, Ronald P. Omberg *(PNNL)*, Bruce J. Makenas *(Fluor Hanford)*

11:45 a.m.
JSFR Innovative Design and Its Challenges to Structural and Fuel Materials, Masaki Morishita, Tai Asayama, Masaki Inoue, Shoji Kotake, Tomoyasu Mizuno *(JAEA)*

TUESDAY, JUNE 10, 2008 • 1:30 P.M.

Leveraging Materials Progress for Next Generation Reactors. *Session Organizer:* Lance Snead *(ORNL). Cochairs:* Jeremy Busby *(ORNL)*, Maria Samaras *(Paul Scherrer Inst)*

Grand Ballroom North
1:30 p.m.
Overview of Modeling Developments for Structural Materials, Brian D. Wirth *(Univ of California, Berkeley)*

1:50 p.m.
CEA Developments of ODS Alloys for Cladding Tube of SFR, Yann de Carlan, Philippe Dubuisson, Jean-Louis Séran, Jean-Luc Bechade, Philippe Billot *(CEA)*

2:10 p.m.
Overview of Fuel Cladding Interaction in Advanced Fast Reactor Systems, A. M. Yacout, G. L. Hofman, Y. S. Kim *(ANL)*

2:30 p.m.
Basic Science for Materials under Extreme Conditions, Steven J. Zinkle *(ORNL)*

TUESDAY, JUNE 10, 2008 • 3:15 P.M.

Advances in Modeling. *Session Organizer:* Lance Snead *(ORNL)*. *Cochairs:* Wolfgang Hoffelner *(Paul Scherrer Inst)*, Dane Morgan *(Univ of Wisconsin)*

Grand Ballroom North
3:15 p.m.
The Direction of Fast Fuel Modeling in the US, Veena Tikare, Timothy Bartel, Steven Wright *(SNL)*, James Belak *(LLNL)*, Pavel Medvedev *(INL)*, Roger Stoller *(ORNL)*, Steven Valone *(LANL)*

3:35 p.m.
The Role of Magnetism in Modelling of Fuels and Structural Materials, Janne Wallenius, Krister Henriksson, Nils Sandberg *(Kungliga Tekniska Högskolan)*, Pär Olsson *(EDF-R&D)*

3:55 p.m.
Advanced Materials Modeling E.U. Perspective, M. Samaras, M. Victoria, W. Hoffelner *(Paul Scherrer Inst)*

4:15 p.m.
Time-dependent Materials Properties and Predictive Models for Advanced Structural Alloys in Fast Reactor Systems, K. Natesan, Meimei Li, S. Majumdar *(ANL)*

4:35 p.m.
Thermal Conductivity Model for UO_2 and MOX With Up to 10% Actinides, R. E. Williford, C. E. Beyer *(PNNL)*

WEDNESDAY, JUNE 11, 2008 • 8:30 A.M.

Fuels—I. *Session Organizer:* Lance Snead *(ORNL)*. *Cochairs:* Douglas C. Crawford *(GE Global Nuclear Fuel)*, Marius Stan *(LANL)*

Grand Ballroom North
8:30 a.m.
Fast Reactor Fuels: U.S. Perspective, Douglas Crawford *(GE Global Nuclear Fuel)*, Steven Hayes, Douglas Porter, Mitchell K. Meyer *(INL)*

8:50 a.m.
Overview of Past and Current ITU Activities on Fuels for Fast Reactors, A. Fernandez, J. McGinley, J. Somers, M. Walter *(Inst for Transuranium Elements)*

9:10 a.m.
Transmutation Target Design and Neutronic Analysis for Transuranic Burning Sodium Fast Reactors, Samuel Bays, Michael Pope *(INL)*, Benoit Forget *(MIT)*, Rodolfo Ferrer, Pavel Medvedev, Mehdi Asgari *(INL)*

9:30 a.m.
Progress in Metal Fuel Development at CRIEPI, Takanari Ogata, Kinya Nakamura, Hirokazu Ohta *(CRIEPI)*

9:50 a.m.
Americium Volatility in TRU Fuel and Demonstration of Oxide Fuel Thermochemical Modeling, Theodore M. Besmann *(ORNL)*

WEDNESDAY, JUNE 11, 2008 • 10:45 A.M.

Fuels—II. *Session Organizer:* Lance Snead *(ORNL)*. *Cochairs:* Madeline Feltus *(DOE)*, Pascal Yvon *(CEA)*

Grand Ballroom North
10:45 a.m.
The Next Generation Nuclear Plant Fuels Development Program, Paul Demkowicz, David Petti *(INL)*

11:05 a.m.
AREVA and CEA R&D Program on HTR Fuel, P. Guillermier *(AREVA NP)*, S. Lansiart *(CEA)*

11:25 a.m.
Behavior of HTGR Particle Fuel under Reactivity Initiated Accident Condition, Miki Umeda, Shohei Ueta, Tomoyuki Sugiyama *(JAEA)*

11:45 a.m.
Fluidized Bed Chemical Vapor Deposition of Pyrolytic Carbon and Silicone Carbide for Very High Temperature Reactor Fuels, E. López-Honorato, P. J. Meadows, Jun Tan, P. Xiao *(Univ of Manchester)*, G. Marsh, T. Abram *(Nexia Solutions)*

WEDNESDAY, JUNE 11, 2008 • 1:30 P.M.

Materials—I. *Session Organizer:* Todd Allen *(Univ of Wisconsin)*. *Cochairs:* Yann de Carlan *(CEA)*, Bill Corwin *(ORNL)*

Grand Ballroom North
1:30 p.m.
Advanced Materials for Advanced Fast Reactors: Moving Beyond 316 Stainless Steel, J. T. Busby *(ORNL)*

1:50 p.m.
Core Materials Development and Testing for the Global Nuclear Energy Partnership's Advanced Burner Reactor, S. A. Maloy *(LANL)*, P. Hosemann, C. Vieh *(LANL/Univ of Leoben)*, T. Romero *(LANL)*, M. Toloczko *(PNNL)*

2:10 p.m.
Cross Cutting Research Project on Structural Materials for Transmutation and Generation IV Systems, C. Fazio *(Forschungszentrum Karlsruhe)*, A. Alamo *(CEA)*, A. Almazouzi *(Studiecentrum voor Kernenergie - Centre D'Étude de L'Énergie Nucléaire)*, S. De Grandis *(Ente per le Nuove Tecnologie l'Energia e l'Ambiente)*, D. Gomez-Briceno *(CIEMAT)*, J. Henry *(CEA)*, L. Malerba *(Studiecentrum voor Kernenergie - Centre D'Étude de L'Énergie Nucléaire)*, M. Rieth *(Forschungszentrum Karlsruhe)*

2:30 p.m.
Perspectives on Radiation Effects in High-Nickel Alloys for Applications in Advanced Reactors, L. K. Mansur, A. F. Rowcliffe, R. K. Nanstad *(ORNL)*

WEDNESDAY, JUNE 11, 2008 • 3:15 P.M.

Materials—II. *Session Organizer:* Todd Allen *(Univ of Wisconsin)*. *Cochairs:* James Marrow *(Univ of Manchester)*, Wolfgang Hoffelner *(Paul Scherrer Inst)*

Grand Ballroom North

3:15 p.m.
Gas Reactor Materials Overview, Pascal Yvon, Jean Louis Séran, Hélène Burlet *(CEA)*

3:35 p.m.
The Evolution of Graphites for High Temperature Gas-Cooled Reactors, T. D. Burchell *(ORNL)*

3:55 p.m.
Materials Options for Gen IV HTGR Heat Exchangers, Richard N. Wright *(INL)*

4:15 p.m.
Ceramics for (V)HTR Application, Jaap G. van der Laan *(NRG Petten)*, Lance L. Snead *(ORNL)*

4:35 p.m.
Candidate Structural Materials for In-Core VHTR Application, Lance L. Snead, Yutai Katoh *(ORNL)*, Will Windes *(INL)*, Kobus Smit *(PBMR)*

WEDNESDAY, JUNE 11, 2008 • 7:00 P.M.

Poster Session—I. *Session Organizer:* Lance Snead *(ORNL)*. *Cochairs:* Lance Snead, Todd Allen *(Univ of Wisconsin)*

Grand Ballroom South
7:00 p.m.
Development of a New Irradiation Performance Code for Metal Fuels, Aydin Karahan, Jacopo Buongiorno, Mujid S. Kazimi *(MIT)*

SB-CVD Process Modelling for High Temperature Reactor Fuels Fabrication, F. Cellier, A. Mendes *(AREVA NP)*, C. Ablitzer *(CEA)*, A. Dollet *(CNRS)*

Radiation Stability of Proton Irradiated ZrC and ZrN, Yong Yang, Clayton Dickerson, Todd R. Allen *(Univ of Wisconsin-Madison)*

Material Corrosion in Liquid KCl-$MgCl_2$ Salt, J. W. Ambrosek, K. Sridharan, M. Anderson, T. Allen *(Univ of Wisconsin-Madison)*

Electrochemical Analysis of Liquid Salts in Conjunction with Neutron Activation Analysis, Dan Ludwig, Luke Olson, Todd Allen, Mark Anderson, Kumar Sridharan *(Univ of Wisconsin-Madison)*

Development of High Burn-Up Fuel with SiC Matrix for Gas-Cooled Fast Reactor, Tatsuya Hinoki, Yi-Hyun Park, Joon-Soo Park *(Institute of Advanced Energy)*, Shuhei Miwa, Takako Donomae *(O-arai Research and Development Center)*

Effects of Coating Temperature and Gas Flow Rate on the Properties of SiC Layer in TRISO-Coated Particles, Weon-Ju Kim, Jeong Nam Park, Jong Hoon Park, Moon Sung Cho, Ji Yeon Park *(KAERI)*

Study on the Nitridation of Spent PWR Oxide Fuel by Use of Simulated Fuel Technique in View of a Nitride Fuel Re-fabrication, Young-Woo Lee, Ho Jin Ryu, Jae Won Lee, Jung Won Lee, Geun Il Park *(KAERI)*

Compatibility of Ti_3SiC_2 (Maxthal®312) with Oxygen Containing Liquid Pb and PbBi, A. Heinzel, G. Müller, A. Weisenburger *(Forschnugszentrum Karlsruhe)*

Effects of Ce Element Addition on the Characteristics of U-Zr Alloys, Seok-Jin Oh, Ki-Hwan Kim, Chan-Bock Lee, Chong-Tak Lee, Se-Jung Jang *(KAERI)*

Small-scale Specimen Testing of Monolithic Fuels and Structural Materials, Ramprashad Prabhakaran, James I. Cole, Douglas E. Burkes, Jian Gan *(INL)*, Indrajit Charit *(Univ of Idaho)*

Proton Irradiation Induced Effects in Titanium Carbide and Titanium Nitride, Clayton Dickerson, Yong Yang, Todd Allen *(Univ of Wisconsin-Madison)*

Sodium Fast Reactor Fuel Evaluation: Oxide Fuels, J. P. Raison *(European Commission)*, T. Mizuno *(JAEA)*, F. Delage *(CEA)*, J. Carmack *(INL)*, Chan Bock Lee *(KAERI)*

Irradiation Creep of Ferritic Dispersion Strengthened (ODS) Steels for Advanced Nuclear Applications, Jiachao Chen, Manuel Pouchon, Wolfgang Hoffelner *(Paul Scherrer Inst)*

The Influence of Liquid Lithium Environment on Tensile Behavior and Microstructure of V-4Cr-4Ti, Meimei Li *(ANL)*, D. T. Hoelzer *(ORNL)*

Microstructural Changes in Thermally Cycled U-Pu-Zr-Am-Np Metallic Transmutation Fuel with 1.5% Lanthanides, Dawn E. Janney, J. Rory Kennedy *(INL)*

Fabrication and Characterization of Uranium Thorium Zirconium Hydride Fuels, Kurt A. Terrani *(Univ of California, Berkeley)*, G. W. Chinthaka Silva *(UNLV)*, Charles B. Yeamans *(Univ of California, Berkeley)*

Characterization of 60U-20Pu-3Am-2Np-15Zr Alloys with 1.5wt% Rare Earth Elements, Douglas E. Burkes, J. Rory Kennedy *(INL)*, Thomas Hartmann *(ISU)*, Cynthia A. Papesch *(INL)*

Mechanical Performance and Design of SiC/SiC for VHTR Control Rod Sheaths, Robert J. Shinavski, Todd Z. Engel *(Hyper-Therm HTC, Inc.)*, Rick Battiste, Rosa Trejo, Edgar Lara-Curzio *(ORNL)*

Characterization of Oxide Dispersion-strengthened Steels by X-ray Absorption Spectroscopy, Shanshan Liu, C. U. Segre *(IIT)*, G. Robert Odette *(Univ of California, Santa Barbara)*

Multiscale Modeling of Point Defect Interactions in Fe-Cr Alloys, Kwan L. Wong, Hyon-Jee Lee *(Univ of California, Berkeley)*, Jae-Hyeok Shim *(Univ of California, Berkeley/Korea Inst of Science and Technology)*, Babak Sadigh *(LLNL)*, Brian D. Wirth *(Univ of California, Berkeley)*

Migration of MA and RE in Metallic Fuel, Yeon Soo Kim, G. L. Hofman, A. M. Yacout *(ANL)*

In-situ Spectroscopic Studies of Pb Corrosion on Reactor Material, Shanshan Liu, Daniel Olive, Jeff Terry, C. U. Segre *(IIT)*

An Update on Fuel Compacting Activities for the Next Generation Nuclear Plant, P. J. Pappano, M. P. Trammell *(ORNL)*

Evolution of Oxide Structure in Ferritic-Martensitic Alloys in Supercritical Water, J. Bischoff, A. T. Motta *(Penn State)*, R. J. Comstock *(Westinghouse)*

Metallic Fast Reactor Fuel Fabrication for GNEP, D. E. Burkes, R. S. Fielding, D. L. Porter *(INL)*

Passive Oxidation and Resultant Strength Degradation of High-Nicalon Type S Fiber, Todd Z. Engel, Steven R. Nutt *(USC)*, Robert J. Shinavski *(Hyper-Therm High Temperature Composites, Inc.)*

Type 316L Austenitic ODS Steel by a Wet Processing, Ho Jin Ryu, Min Ho Kim, Chang Hee Han, Jinsung Jang *(KAERI)*

Kinetics of Excess Oxygen Migration in Hyperstoichiometric Uranium Dioxide, Chaitanya Deo *(Georgia Tech)*, Blas P. Uberuaga *(LANL)*

IGSCC Resistance of Special Boundaries in Alloy 690 in Supercritical Water, E. A. West, G. S. Was *(Univ of Michigan)*

Economic Benefits of Advanced Materials in Nuclear Power Systems, J. T. Busby *(ORNL)*

WEDNESDAY, JUNE 11, 2008 • 8:00 P.M.

Poster Session—II. *Session Organizer:* Todd Allen *(Univ of Wisconsin)*. *Cochairs:* Todd Allen, Lance Snead *(ORNL)*

Grand Ballroom South
8:00 p.m.

The Effects of Ball Milling Parameters on the Homogeneity of Y-Ti-O Nano-Feature Distribution in Nano-Structured Ferritic Alloys, N. Cunningham, G. R. Odette *(Univ of California, Santa Barbara)*

Thermophysical Properties of (U,Pu)N, A. Ciriello *(AREVA NP)*, V. V. Rondinella, D. Staicu, T. Wiss *(JRC-ITU)*

Sodium Fast Reactor Fuel Evaluation: Metallic Alloys, Jon Carmack, Douglas Porter *(INL)*, Yoon Il Chang *(ANL)*, Steven L. Hayes, Mitchell K. Meyer, Douglas Burkes *(INL)*, Chan Bock Lee *(KAERI)*

Impact of Swelling on Fuel Thermal Conductivity, R. E. Stoller, S. I. Golubov, L. L. Snead *(ORNL)*

The EBR-II X501 Minor Actinide Burning Experiment, M. K. Meyer, S. L. Hayes, W. J. Carmack *(INL)*, H. Tsai *(ANL)*

The Irradiation Performance of ZrC in Gas Cooled Reactor Fuel, Lance L. Snead, Yutai Katoh *(ORNL)*, David Petti *(INL)*, Kazuhiro Sawa *(JAEA)*

An Investigation of Fuel Cladding Chemical Interaction in Metallic Transmutation Fuels, James I. Cole, J. R. Kennedy, D. D. Keiser *(INL)*

On the Effects of Irradiation and Helium on the Yield Stress Changes and Hardening and Non-hardening Embrittlement of 8Cr Tempered Martensitic Steels: Compilation and Analysis of Existing Data, T. Yamamoto *(Univ of California, Santa Barbara)*, Y. Dai *(Paul Scherrer Inst)*, G. R. Odette, M. Salston, P. Miao *(Univ of California, Santa Barbara)*

Characterization and In-Situ Ion-Irradiation of MA957 ODS Steel, Djamel Kaoumi, Arthur Motta *(Penn State)*, Mark Kirk *(ANL)*

Characterization of HT-9 Ferritic-Martensitic Steels Oxidized in Lead Bismuth Eutectic, J. Kunkle, A. T. Motta, *(Penn State)*, R. J. Comstock *(Westinghouse)*, P. Hosemann *(LANL)*

TEM Investigation of Oxide Development on 9Cr ODS in SCW, A. D. Siwy, T. E. Clark, A. T. Motta *(Penn State)*

Neutron Irradiation Effect in β-SiC at Very High Temperatures, S. Kondo, Y. Katoh, L. L. Snead *(ORNL)*

Sodium Fast Reactor Fuel Evaluation: Core Materials, Jin Sik Cheon, Chan Bock Lee, Byoung Oon Lee *(KAERI)*, J. P. Raison *(European Commission)*, T. Mizuno *(JAEA)*, F. Delage *(CEA)*, J. Carmack *(INL)*

Micro Mechanic Testing and Local Electrode Atom Probe Microscope (LEAP) Measurements on Oxide Dispersed Strengthened (ODS) Alloys, P. Hosemann *(LANL/Univ of Leoben)*, E. Stergar *(Univ of Leoben)*, C. Vieh *(LANL/Univ of Leoben)*, R. R. Greco, M. J. Cappiello, S. A. Maloy *(LANL)*

Characterization by SEM and TEM of Pyrolytic Carbon for HTR Fuel Particles, C. Garcia *(LCTS)*, O. Dugne *(CEA)*, F. Charollais *(CEA CADARACHE)*

Molecular Dynamics Calculations of the Thermal Neutron Scattering Cross Sections of Graphite, B. D. Hehr, A. I. Hawari *(NCSU)*

Neutron Scattering Experiments in Reactor Grade Graphite, D. D. DiJulio, A. I. Hawari *(NCSU)*

Phase-field Modeling of Microstructure and Thermal Conductivity Evolution under Radiations, Shenyang Hu, Charles H. Henager Jr., Ken J. Geelhood, Walter G. Luscher *(PNNL)*

Status of High-Chromium Ferritic/Martensitic Steels Developed for Fusion Applications, Hiroyasu Tanigawa, Takanori Hirose, Eiichi Wakai, Shiro Jitsukawa *(JAEA)*, Mikhail A. Sokolov, Ronald L. Klueh *(ORNL)*, Naoyuki Hashimoto *(Hokkaido Univ)*

Mechanical Properties of Irradiated Nanocluster Strengthened Ferritic Alloy 14YWT and Advanced European Ferritic Alloy Eurofer 97 ODS, D. A. McClintock, M. A. Sokolov, D. T. Hoelzer, Randy Nanstad *(ORNL)*

High Temperature Corrosion of Fe-9Cr Steel in Liquid Lead-Bismuth, Laure Martinelli, Fanny Balbaud-Célérier *(CEA)*

High Temperature Environmental Stability of Boron Surface Treated Fuel Cladding Materials, Jesse A. Gudmundson, Kumar Sridharan, Todd R. Allen *(Univ of Wisconsin-Madison)*, Edward J. Lahoda *(Westinghouse)*, Timothy J. Renk *(SNL)*

Preliminary Issues Associated with the Next Generation Nuclear Plant Intermediate Heat Exchanger Design, K. Natesan, S. Majumdar, A. Moisseytsev *(ANL)*

Development of Molecular Dynamics Models for Simulating TRISO Fuel Kernels, J. M. Harp, A. I. Hawari *(NCSU)*

Atomistically Informed Fuel-Performance Codes: A Proof of Principle Using FRAPCON and Molecular Dynamics Simulation, Daniel A. Vega, Taku Watanabe, Susan B. Sinnott, Simon R. Phillpot, James S. Tulenko *(Univ of Florida)*

A Database and Constitutive Model for the Static and Creep Strength of MA957 from Room Temperature to 1000°C, M. C. Salston, G. R. Odette *(Univ of California, Santa Barbara)*

A Comparison of Cavity Formation in Neutron Irradiated Nanostructured Ferritic Alloys and Tempered Martensitic Steels in High He/dpa Ratio, G. R. Odette, P. Miao, T. Yamamoto *(Univ of California, Santa Barbara)*, D. Edwards *(PNNL)*, H. Tanagawa *(JAEA)*, R. Kurtz *(PNNL)*

On the Thermal Stability of 9% Cr Tempered Martensitic Steels and Nanostructured Ferritic Alloys, P. Miao, G. R. Odette, D. Klingensmith, T. Yamamoto *(Univ of California, Santa Barbara)*

Irradiation Creep Behavior of Silicon Carbide, Yutai Katoh, Lance L. Snead *(ORNL)*

R&D of Irradiation Damage Parameter and Management Technology for Structural Materials, Eiichi Wakai, Shigeru Takaya, Nariaki Okubo, Shoichi Kato, Yoshiteru Matsui, Siniti Kitazawa, Fumiki Takada, Yoshiyuki Kaji, Shiro Jitsukawa, Kazumi Aoto *(JAEA)*, Takeo Iwai, Hiroaki Abe *(Tokyo Univ)*, Fumiou Fukushima, Kouchi Tokizawa *(Intesco Co. Ltd)*, Shuhei Nogami, Mamabu Sato, Akira Hasegawa *(Tohoku Univ)*

Sintering of Simulated Inert Matrix Fuel by Microwave Hybrid Heating, R. R. Thridandapani, C. E. Folgar, D. C. Folz, S. McGinnis, D. E. Clark *(Virginia Polytechnic Inst and State Univ)*

THURSDAY, JUNE 12, 2008 • 8:30 A.M.

Emerging Concepts. *Session Organizer:* Todd Allen *(Univ of Wisconsin)*. *Cochairs:* Gary S. Was *(Univ of Michigan)*, Yann de Carlan *(CEA)*

Grand Ballroom North

8:30 a.m.
Structural Materials and Fuels for Space Power Plants, Cheryl Bowman *(NASA)*, Jeremy Busby *(ORNL)*

8:50 a.m.
Refractory Metals for Advanced Nuclear Reactor Concepts, Todd Leonhardt *(Rhenium Alloys)*

9:10 a.m.
High Temperature Irradiation Experiments of Gen IV Structural Metallic Materials, R. K. Nanstad, D. A. McClintock, D. T. Hoelzer *(ORNL)*, L. Tan, T. R. Allen *(Univ of Wisconsin-Madison)*

9:30 a.m.
Development of Ferritic/Martensitic Steel for SFR Fuel Cladding Tube, Sung-Ho Kim, Chan Bock Lee, Dohee Hahn *(KAERI)*

9:50 a.m.
Environmental Controls for Higher Temperature Direct-Cycle Light Water Reactors, J. A. Wilson *(Exelon Nuclear)*, R. Pathania *(EPRI)*, S. Hettiarachchi *(GE-Hitachi Nuclear Energy)*

THURSDAY, JUNE 12, 2008 • 10:45 A.M.

Materials—III. *Session Organizer:* Todd Allen *(Univ of Wisconsin)*. *Cochairs:* Mitch Meyer *(INL)*, Arthur Motta *(Penn State)*

Grand Ballroom North

10:45 a.m.
Use and Limitation of Ion Beams in Understanding Radiation Effects in Reactor Materials, Gary S. Was *(Univ of Michigan)*

11:05 p.m.
Flaw Characterization Techniques for Plant Components, Greg Selby *(EPRI)*

11:25 p.m.
Quantum Mechanical Based Determination of Diffusion in Ni-Cr, J. D. Tucker, T. R. Allen, D. Morgan *(Univ of Wisconsin-Madison)*

11:45 p.m.
Radiation Effects on Epoxy/Carbon-Fiber Composite, E. N. Hoffman, T. E. Skidmore *(SRNL)*

THURSDAY, JUNE 12, 2008 • 1:30 P.M.

Fuels—III. *Session Organizer:* Todd Allen *(Univ of Wisconsin)*. *Cochairs:* Jon Carmack *(INL)*, Travis Knight *(Univ of South Carolina)*

Grand Ballroom North

1:30 p.m.
Next Generation Fuel Irradiation Capability in the High Flux Reactor Petten, Michael A. Fütterer, Elio D'Agata, Mathias Laurie, Alain Marmier, Philippe Raison *(European Commission)*, Klaas Bakker, Sander de Groot, Frodo Klaassen *[Nuclear Research and Consultancy Group (NRG)]*

1:50 p.m.
Performance of FCCI Barrier Foils for U-Zr-X Metallic Fuel, Ho Jin Ryu, Byoung Oon Lee, Seok Jin Oh, Yoon Myung Woo, Chan Bock Lee *(KAERI)*

2:10 p.m.
Development of Tritium Targets for Use in Pressurized Water Reactors: Testing and Evaluation Activities, Glenn W. Hollenberg, Clark Carlson, David Senor, Don Lanning *(PNNL)*

2:30 p.m.
The GNEP Coupled End-to-End (CETE) Fuel Processing Program, J. L. Binder, G. L. Bell *(ORNL)*

THURSDAY, JUNE 12, 2008 • 3:15 P.M.

Corrosion. *Session Organizer:* Todd Allen *(Univ of Wisconsin)*. *Cochairs:* Todd Allen, Bruce Pint *(ORNL)*

Grand Ballroom North

3:15 p.m.
Gas-Cooled Reactor Corrosion Issues, Celine Cabet, Jean-Charles Robin *(CEA)*

3:35 p.m.
New Techniques for Intergranular Stress Corrosion Crack Observation, T. J. Marrow, J. Duff, D. Engelberg, G. Johnson, A. King *(Univ of Manchester)*, W. Ludwig *(European Synchrotron Radiation Facility and MATEIS INSA Lyon)*

3:55 p.m.
Compatibility of FBR Materials with Sodium, Tomohiro Furukawa, Eiichi Yoshida *(JAEA)*

4:15 p.m.
Corrosion in Recycling Systems, Ken C. Marsden *(INL)*

4:35 p.m.
A Review of Cladding Corrosion in UK Advanced Gas-cooled Reactors, Tim Abram *(Nexia Solutions)*

THURSDAY, JUNE 12, 2008 • 4:55 P.M.

Closing Remarks

Grand Ballroom North

4:55 p.m.

"Preparing for the Nuclear Engineering Professional Engineering Exam"

Sunday, June 8, 2008
8:30 a.m. - 5:00 p.m.
Location: Dreams G Room

WORKSHOP ORGANIZER:

Dr. Robert D. Busch, PE, Director, Nuclear Engineering Laboratory, University of New Mexico

WORKSHOP INSTRUCTORS:

Kermit Bunde, DOE Idaho
Dr. Robert D. Busch, University of New Mexico
Gerald Loignan, SCANA

PURPOSE OF WORKSHOP:

This course is designed for individuals who have passed the Fundamentals of Engineering Exam (formerly the EIT exam) and who are preparing for the Professional Engineering Exam (PE exam) in Nuclear Engineering. Instructors will provide details on registration and how it differs from state to state, plus an overview of the examination formats. The six basic skill areas; neutronics, instrumentation and measurements, nuclear power shielding, nuclear materials and fuels, and radioactive waste, will be discussed in detail. For each skill area, the instructor will describe the topics and the skills to be tested within each.

Examples of questions will be presented in depth, after which students will work other typical questions on their own. Instructors will provide assistance, then review solutions with the group. Students will be provided a sample exam and list of recommended resources for continued study.

WORKSHOP OUTLINE:

Time	Topic	Instructor
8:30 AM – 9:00 AM	Introduction	
9:00 AM – 9:30 AM	Radioactive Waste	Busch
9:30 AM – 10:30 AM	Instrumentation	Busch
10:30 AM – 11:30 AM	Neutronics	Bunde
11:30 AM – 1:00 PM	LUNCH (on your own)	
1:00 PM – 2:00 PM	Nuclear Fuels	Loignan
2:00 PM – 3:00 PM	Radiation Protection/Shielding	Busch
3:00 PM – 4:30 PM	Nuclear Power/PRA	Loignan
4:30 PM – 5:00 PM	Wrapup	

Digital Instrumentation and Control and Human Machine Interface (ICHMI)

Sponsored by the ANS Human Factors Division

Sunday, June 8, 2008
8:00 AM to 5:00 PM
Location: Dreams H Room

PURPOSE OF WORKSHOP:

This course addresses the latest developments on the use of software-based equipment on nuclear plant applications, both for existing and new plants. This has become increasingly important as plants move into License Renewal, and in consideration of Obsolete Equipment Upgrades and replacements at existing facilities. Speakers will provide the perspectives of the Nuclear Regulatory Commission, the Electric Power Research Institute, industry and international participation, with emphasis on most recent developments and ongoing activities including the new plant Combined Operating License (COL) application process in the U.S. and the NRC Interim Staff Guidance (ISG) on digital ICHMI.

DRAFT SCHEDULE:

Time	Topic	Presenter
8:00 AM – 8:15 AM	Introduction of Participants and Overview	Commissioner Peter Lyons, NRC
8:15 AM – 8:45 AM	Overview Perspective	Ted Quinn, GEH/ANS Past President
8:45 AM – 9:30 AM	Regulatory Framework	Steve Arndt, NRC
9:30 AM – 10:00 AM	NRC Regulatory Research	Steve Arndt, NRC
10:00 AM – 10:15	Break	
10:15 AM – 10:30 AM	Overview	Don Miller, Ohio State/ANS Past President
10:30 AM – 11:15 AM	NEI Overview	Gordon Clefton, NEI
11:15 AM – 12:00 PM	EPRI Programs	Ray Torok, EPRI
12:00 PM – 12:45 PM	Lunch	
12:45 PM – 1:30 PM	Latest Guidance – HMI/HSI	John O'Hara, BNL
1:30 PM – 2:00 PM	Triconex Lessons Learned	Clayton Scott, Invensys
2:00 PM – 2:15 PM	Break	
2:15 PM – 2:45 PM	Westinghouse Lessons Learned	Warren Odess-Gillett, Westinghouse
2:45 PM – 3:15 PM	GEH Lessons Learned	Richard Miller, GEH
3:15 PM – 3:45 PM	Utility Upgrade Program	Scott Patterson, PG&E
3:45 PM – 4:15 PM	IAEA and International Perspectives	Richard Wood, ORNL
4:15 PM – 5:00 PM	Panel Discussion	ALL

EM-60 Workshop

Friday, June 13, 2008 • 8:00 AM to 5:00 PM • Location: Dreams G Room

A Criticality Safety workshop earlier this year identified several problem areas that affect the DOE complex. Workgroups were established to propose solutions to these areas. This workshop will hear reports of the workgroups, discuss and recommend needed changes and decide on necessary work products to help ensure that sound criticality safety programs facilitate continual improvement in operational safety and efficiency.

8:00 AM **Welcome** – Robert Wilson/ Chuan-Fu Wu

8:10 AM **Report on Oak Ridge Workshop** – Calvin Hopper

8:20 AM **Introduction of Plenary Speakers** – Robert Wilson
Elizabeth Seller *(Manager, Idaho Operations Office)*
Gerald Boyd *(Manager, Oak Ridge Operations Office)*
David Brockman *(Manager, Richland Operations Office)*

Work group reports
These reports will present results of working groups' effort: 1) Identified problems, and 2) proposed solution. Presentations need to be very brief and handouts will be provided to the audience, so they can be used during the afternoon break-out sessions.

9:00 AM **Inconsistencies between DOE Orders, Standards, and Guides results in inefficiencies in implementation.** Glenn Christenbury
Proposed break-out session lead: Fitz Trumble/Kevin Kimble

9:15 AM **Inadequate Criticality Safety Evaluations may lead to stop work and inefficiencies.** Adolf Garcia
Proposed break-out session lead: Jim Morman

9:30 AM **Lack of support for mass characterization processes and lack of standards creates inefficiencies in controls and application.** Larry Berg/Tom Hines
Proposed break-out session lead: Jeff Castor

9:45 AM **Lack of repository for NCS evaluations and data leads to re-generation of analyses and re-creation of controls for common operations.** Lori Scott.
Proposed break-out session lead: Calvin Hopper

10:00 AM **Lack of standardized methodology for common NCS evaluations lead to inefficiency and create problems when material is transferred from one location to another.** Carol Cise
Proposed break-out session lead: Carol Cise

10:15 AM **Break**

10:30 AM **Criticality Detection and alarm methods are not tailored to the different EM activities, which leads to confusion and possible excessive control of the risk.** Kristan Wessels
Proposed break-out session lead: Kristan Wessels

10:45 AM **Experiments and/or Data needs to enhance EM mission work and reduce cost/schedule.** Robert Wilson
Proposed break-out session lead: Mike Westfall

11:00 AM **Ineffective use of data from nonconformances, lessons learned, and corrective actions lead to repetitive problems at EM sites.** Larry Berg
Proposed break-out session lead: Bob Wilson

11:15 AM **Contracting practices hinder effective criticality safety staffing**
Retiring workforce and nuclear industry growth is creating deficiencies in qualified staffing Funding, Resources, Contractor & DOE Management Commitment, Support, and Monitoring. Robert Wilson/Chuan-Fu Wu
No break-out session

11:30 AM **Retiring/retention study.** Kristen Wessel

11:45 AM **Lunch**

1:00–3:00 PM **Workgroup breakouts**

3:00–5:00 PM **Workgroup reports and issue resolutions**

NATIONAL COMMITTEES

Accreditation Policies and Procedures
SUNDAY, 5:00 P.M. – 7:00 P.M.
LOCATION: Disney Exhibit Hall Room H

ANS Business Meeting
MONDAY, 4:00 P.M. – 5:00 P.M.
LOCATION: Wonder Garden Room

Board of Directors
Professional Division Reports
WEDNESDAY, 4:00 P.M. – 5:30 P.M.
LOCATION: Disneyland Grand Ballroom-Center

Board of Directors
THURSDAY, 8:00 A.M. – 5:00 P.M.
LOCATION: Disneyland Grand Ballroom-Center

Bylaws and Rules
SUNDAY, 1:30 P.M. – 4:00 P.M.
LOCATION: Disney Exhibit Hall Room F

Finance
TUESDAY, 4:00 P.M. – 7:00 P.M.
LOCATION: Dreams J

Honors and Awards
MONDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Dreams B

International
SUNDAY, 11:30 A.M. – 2:30 P.M.
LOCATION: Dreams D

Local Sections/Workshop
SUNDAY, 8:00 A.M. -12:00 P.M.
LOCATION: Wonder B

Membership
SUNDAY, 11:00 A.M. – 1:00 P.M.
LOCATION: Dreams A

National Program Committee (NPC)
Program
WEDNESDAY, 4:00 P.M. – 7:00 P.M.
LOCATION: Magic Kingdom Ballroom 3

Screening and International
MONDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Magic Kingdom Ballroom 3

NEED
SUNDAY, 7:30 P.M. – 9:30 P.M.
LOCATION: Disney Exhibit Hall Room I

Planning
SUNDAY, 2:00 P.M. – 6:00 P.M.
LOCATION: Wonder E

President's Meetings
with Committee Chairs
SUNDAY, 9:00 A.M. – 10:30 A.M.
LOCATION: Wonder D

with Division Chairs
SUNDAY, 10:30 A.M. – 11:30 A.M.
LOCATION: Wonder D

Professional Development Workshop
TUESDAY, 7:30 A.M. – 8:30 A.M.
LOCATION: Dreams B

Professional Divisions
Committee Meeting
TUESDAY, 4:00 P.M. – 6:30 P.M.
LOCATION: Wonder Garden Room

Training Workshop
SATURDAY, 5:00 P.M. – 8:00 P.M.
LOCATION: Dreams G

Professional Engineering Exam
SUNDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Disney Exhibit Hall Room G

Professional Women in ANS
MONDAY, 11:30 A.M. – 1:00 P.M.
LOCATION: Wonder E

Public Information
SUNDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Adventure C

Public Policy
WEDNESDAY, 11:30 A.M. – 1:30 P.M.
LOCATION: Dreams B

Publications Steering
Book Publishing
SUNDAY, 11:00 A.M. – 12:00 P.M.
LOCATION: Adventure A

Publications Steering
Meetings, Proceedings and Transactions
MONDAY, 7:30 A.M. – 8:30 A.M.
LOCATION: Dreams B

Nuclear News Editorial Advisory
SUNDAY, 4:00 P.M. – 5:30 P.M.
LOCATION: Adventure A

Publications Steering
MONDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Dreams D

Technical Journals
SUNDAY, 1:00 P.M. – 3:30 P.M.
LOCATION: Adventure A

Scholarship Policy and Coordination
TUESDAY, 4:00 P.M. – 5:00 P.M.
LOCATION: Dreams E

Student Sections
Executive
MONDAY, 6:00 P.M. – 7:00 P.M.
LOCATION: Wonder Garden Room

Reports
MONDAY, 7:00 P.M. – 8:00 P.M.
LOCATION: Wonder Garden Room

SPECIAL COMMITTEES

Development
TUESDAY, 1:30 P.M. – 3:00 P.M.
LOCATION: Dreams E

Nuclear Nonproliferation
SUNDAY, 2:00 P.M. – 4:00 P.M.
LOCATION: Disney Exhibit Hall Room A

OTHER COMMITTEES

16th PBNC Organizing Committee
MONDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Dreams G

ANFM-IV Planning Meeting
TUESDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Sleeping Beauty Pavilion

CNF
MONDAY, 7:30 P.M. – 10:00 P.M.
LOCATION: Dreams A

CONTE '09 Program Committee
MONDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Dreams E

Eagle Alliance Board of Directors
SUNDAY, 1:00 P.M. – 3:30 P.M.
LOCATION: Adventure C

ICAPP 2009 Planning Meeting
MONDAY, 1:00 P.M. – 2:30 P.M.
LOCATION: Dreams B

INSC
SUNDAY, 3:00 P.M. – 6:00 P.M.
LOCATION: Dreams D

Mathematics and Computation/ Reactor Physics/ Radiation Protection and Shielding Joint Benchmark Meeting
SUNDAY, 11:00 A.M. – 1:00 P.M.
LOCATION: Adventure B

NEDHO
MONDAY, 4:30 P.M. – 6:00 P.M.
LOCATION: Wonder A

NERI Consortium
TUESDAY, 4:00 P.M. – 8:00 P.M.
LOCATION: Wonder Executive Room

UWC 2008 Planning Committee
SUNDAY, 12:00 P.M. – 12:30 P.M.
LOCATION: Adventure C

DIVISION COMMITTEES

Accelerator Applications
Executive
MONDAY, 11:30 A.M. – 1:30 P.M.
LOCATION: Dreams E

Aerospace Nuclear Science and Technologies
SUNDAY, 12:00 P.M. – 2:00 P.M.
LOCATION: Disney Exhibit Hall Room A

Biology and Medicine
Committee of the Whole
SUNDAY, 4:00 P.M. – 5:30 P.M.
LOCATION: Disney Exhibit Hall Room F

Computational Medical Physics Working Group
SUNDAY, 10:00 A.M. – 11:00 A.M.
LOCATION: Adventure B

Decommissioning, Decontamination and Reutilization
Committee Meeting
SUNDAY, 1:00 P.M. – 5:00 P.M.
LOCATION: Disney Exhibit Hall Room D

Education and Training
Alpha Nu Sigma
SUNDAY, 1:00 P.M. – 2:00 P.M.
LOCATION: Wonder E

Executive/Membership/ Honors and Awards
SUNDAY, 1:30 P.M. – 4:00 P.M.
LOCATION: Disney Exhibit Hall Room G

Nuclear Workforce Working Group
SUNDAY, 12:00 P.M. – 1:00 P.M.
LOCATION: Wonder E

Program
SUNDAY, 10:30 A.M. – 12:00 P.M.
LOCATION: Wonder E

University/Industry/Government Relations
SUNDAY, 9:30 A.M. – 10:30 A.M.
LOCATION: Wonder E

Environmental Sciences
ESD Special Committee on Climate Change
SUNDAY, 1:00 P.M. – 3:00 P.M.
LOCATION: Wonder C

Executive
SUNDAY, 10:00 A.M. – 12:00 P.M.
LOCATION: Wonder A

Nuclear Production of Hydrogen Working Group
SUNDAY, 12:00 P.M. – 1:00 P.M.
LOCATION: Wonder A

Environmental Sciences
Program
SUNDAY, 8:30 A.M. – 10:00 A.M.
LOCATION: Wonder A

Fuel Cycle and Waste Management
Executive
SUNDAY, 1:00 P.M. – 2:30 P.M.
LOCATION: Wonder B

Program
SUNDAY, 12:00 P.M. – 1:00 P.M.
LOCATION: Wonder B

Technical Operating and Standards Committee
SUNDAY, 2:30 P.M. – 3:30 P.M.
LOCATION: Wonder B

Fusion Energy
Executive
SUNDAY, 3:00 P.M. – 5:00 P.M.
LOCATION: Disney Exhibit Hall Room H

Human Factors
Executive/Program
TUESDAY, 12:00 P.M. – 1:30 P.M.
LOCATION: Dreams E

Isotopes and Radiation
Executive
SUNDAY, 2:30 P.M. – 4:00 P.M.
LOCATION: Disney Exhibit Hall Room E

Joint Program Committee – I&R and B&M
SUNDAY, 1:30 P.M. – 2:30 P.M.
LOCATION: Disney Exhibit Hall Room E

Materials Science and Technology
Executive
MONDAY, 7:00 P.M. – 9:00 P.M.
LOCATION: Wonder A

Mathematics and Computation
Computational Medical Physics Working Group
SUNDAY, 10:00 A.M. – 11:00 A.M.
LOCATION: Adventure B

Executive
SUNDAY, 2:00 P.M. – 4:00 P.M.
LOCATION: Dreams A

Mathematics and Computation

Program
SUNDAY, 1:00 P.M. – 2:00 P.M.
LOCATION: Dreams A

Nuclear Criticality Safety

Education Meeting
SUNDAY, 1:00 P.M. – 1:30 P.M.
LOCATION: Adventure B

Executive
SUNDAY, 2:30 P.M. – 4:00 P.M.
LOCATION: Adventure B

Program
SUNDAY, 1:30 P.M. – 2:30 P.M.
LOCATION: Adventure B

Nuclear Installation Safety

Executive
SUNDAY, 7:30 P.M. – 9:30 P.M.
LOCATION: Disney Exhibit Hall Room C

Program
SUNDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Disney Exhibit Hall Room C

Operations and Power

Executive
SUNDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Wonder D

Nuclear Construction Working Group
SUNDAY, 2:30 P.M. – 4:00 P.M.
LOCATION: Wonder D

Program
SUNDAY, 12:30 P.M. – 2:30 P.M.
LOCATION: Wonder D

Radiation Protection and Shielding

Executive
MONDAY, 5:00 P.M. – 6:30 P.M.
LOCATION: Wonder E

Program
MONDAY, 4:00 P.M. – 5:00 P.M.
LOCATION: Wonder E

Reactor Physics

Executive
SUNDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Wonder A

Program
SUNDAY, 2:00 P.M. – 4:00 P.M.
LOCATION: Wonder A

Robotics and Remote Systems

Executive
SUNDAY, 12:00 P.M. – 4:00 P.M.
LOCATION: Disney Exhibit Hall Room B

Thermal Hydraulics

Executive
SUNDAY, 5:00 P.M. – 7:00 P.M.
LOCATION: Disney Exhibit Hall Room I

Program
SUNDAY, 3:00 P.M. – 5:00 P.M.
LOCATION: Disney Exhibit Hall Room I

Young Member Group

Executive Committee
SUNDAY, 7:00 A.M. – 8:30 A.M.
LOCATION: Wonder A

STANDARDS COMMITTEES

ANS Standards Board

TUESDAY, 9:00 A.M. – 5:00 P.M.
LOCATION: Dreams B

ANS-8.1

TUESDAY, 7:00 A.M. – 8:30 A.M.
LOCATION: Wonder E

ANS-8.3

SUNDAY, 10:00 A.M. – 11:30 A.M.
LOCATION: Dreams E

ANS-8.12

TUESDAY, 4:00 P.M. – 6:00 P.M.
LOCATION: Wonder E

ANS-8.20

SUNDAY, 9:00 A.M. – 12:00 P.M.
LOCATION: Dreams B

ANS-8.21

TUESDAY, 7:00 A.M. – 8:30 A.M.
LOCATION: Dreams J

ANS-8.21

THURSDAY, 7:00 A.M. – 8:30 A.M.
LOCATION: Dreams J

ANS-10/ANS-10.7

THURSDAY, 7:00 A.M. – 8:30 A.M.
LOCATION: Dreams E

ANS-18.1

MONDAY, 1:00 P.M. – 5:00 P.M.
LOCATION: Dreams J

ANS-19

MONDAY, 10:30 A.M. – 12:30 P.M.
LOCATION: Dreams B

ANS-19.3

SUNDAY, 1:00 P.M. – 2:00 P.M.
LOCATION: Dreams B

ANS-28/ANS-53.1

WEDNESDAY, 8:30 A.M. – 5:00 P.M.
LOCATION: Dreams F

ANS-28/ANS-53.1

THURSDAY, 8:30 A.M. – 12:00 P.M.
LOCATION: Dreams F

ANS-58.24

TUESDAY, 8:00 A.M. – 5:00 P.M.
LOCATION: Dreams F

ANS 58.25

WEDNESDAY, 8:00 A.M. – 5:00 P.M.
LOCATION: Dreams C

NFSC

MONDAY, 12:30 P.M. – 6:30 P.M.
LOCATION: Disney Grand Ballroom South

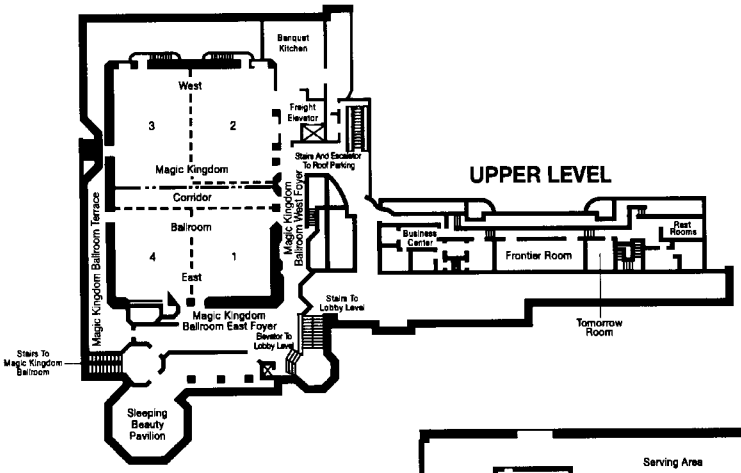
RISC

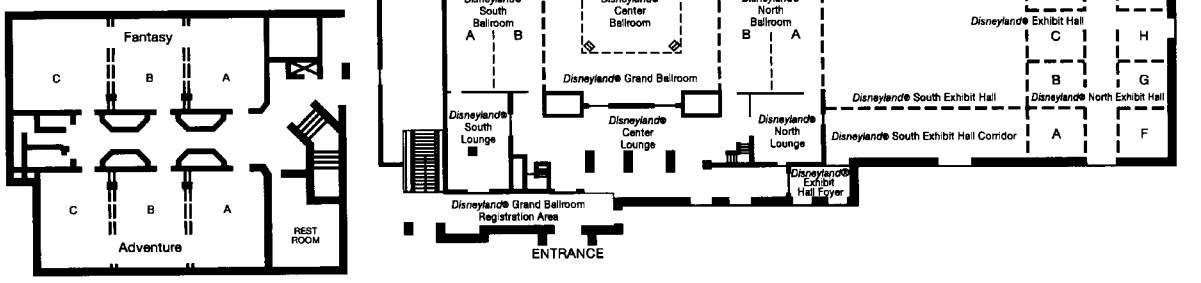
WEDNESDAY, 8:00 A.M. – 5:00 P.M.
LOCATION: Wonder Garden Room

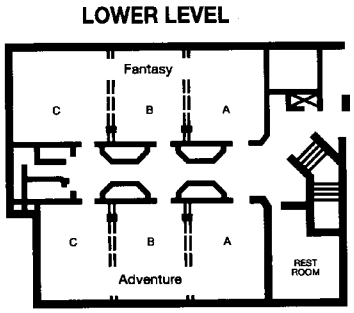
PLEASE NOTE:
Some afternoon committee meetings will be held in rooms that follow a technical session. The technical sessions must be allowed to finish prior to entering the room to begin the committee meetings.

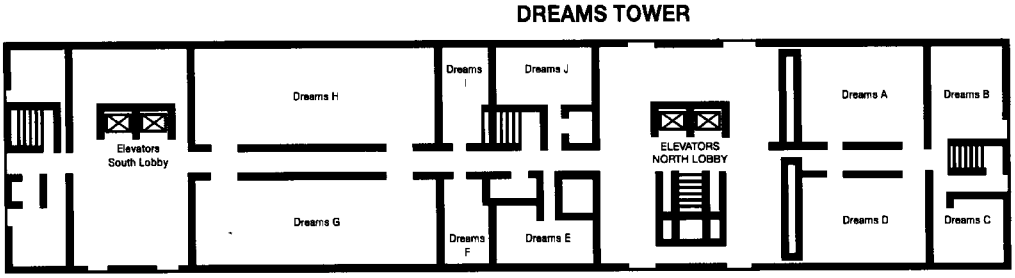
Disneyland Hotel

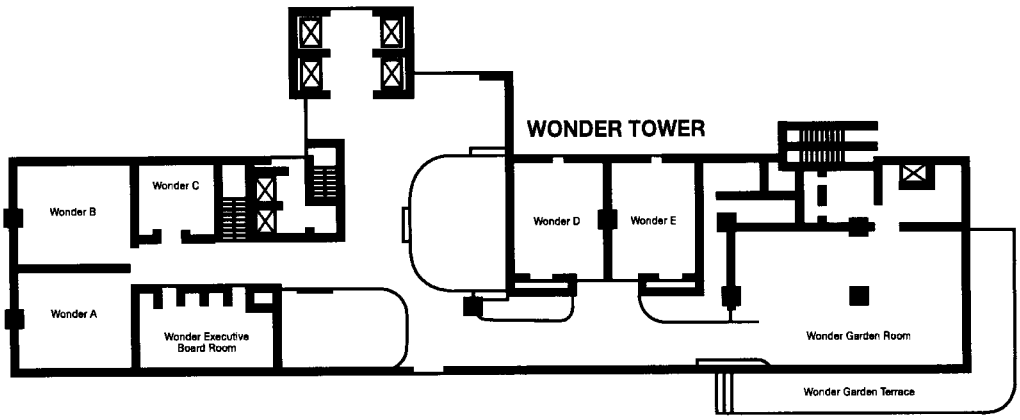
CONVENTION CENTER











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Aare-Tessin Ltd. for Electricity (Atel)
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Ameren-UE
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American Nuclear Insurers
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AREVA NC
AREVA NP
Arizona Public Service Co.
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Sargent & Lundy
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Southern Nuclear Operating Co.
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Technical Associates
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USEC Inc.

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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, 70 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.