# OFFICIAL PROGRAM

## 2001 ANS Winter Meeting

November 11 - 15, 2001  
Reno, Nevada  
Reno Hilton Hotel

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Visit ANS home page www.ans.org for future meetings and more!
MEETING HIGHLIGHTS

Saturday - November 10th
8:00 a.m. - 12:00 p.m. Student Mini-Conference: Technical Presentations
8:00 a.m. - 5:00 p.m. Teachers Workshop
12:30 p.m. - 3:00 p.m. Student Mini-Conference: Professional Development Workshop and Lunch
3:00 p.m. - 5:00 p.m. Student Mini-Conference: Technical Presentations
5:00 p.m. - 8:00 p.m. Professional Divisions Training Session

Sunday - November 11th
8:00 a.m. - 12:00 p.m. Student Mini-Conference: Technical Presentations
1:00 p.m. - 1:30 p.m. First-Time Attendees Orientation
4:00 p.m. - 5:00 p.m. Student Assistants Training Session
5:00 p.m. - 6:00 p.m. Mentoring Program
6:00 p.m. - 7:30 p.m. ANS President's Reception & Nuclear Technology Expo

Monday - November 12th
8:00 a.m. - 10:00 a.m. Spouse/Guest Hospitality
8:00 a.m. - 10:00 a.m. Plenary Session: Global Energy Perspectives - Part I
10:00 a.m. - 11:30 a.m. Winter Meeting: Technical Sessions
10:00 a.m. - 3:00 p.m. Spouse/Guest Tour: The Donner Memorial & North Lake Tahoe
11:00 a.m. - 6:00 p.m. ANS Nuclear Technology Expo
11:30 a.m. - 1:00 p.m. Attendee Luncheon in Nuclear Technology Expo
1:00 p.m. - 4:00 p.m. Winter Meeting: Technical Sessions
1:00 p.m. - 4:00 p.m. Plenary Session-Topical Meeting: Practical Implementation of Nuclear Criticality Safety
1:00 p.m. - 4:00 p.m. Plenary Session-Topical Meeting: Nuclear Applications in the New Millennium
4:00 p.m. - 6:00 p.m. Poster Session-Nuclear Applications in the New Millennium (in the Nuclear Technology Expo)
4:00 p.m. - 6:00 p.m. Reception in the Nuclear Technology Expo

Over 300 sunny days a year make Reno/Lake Tahoe an ideal place for outdoor recreation.

When it comes to winter fun they've got you covered, with more world-class ski resorts than any other destination in North America and an average of 40 feet of snow per year. Whether you prefer downhill skiing, cross-country, or snowboarding, Reno/Lake Tahoe has the terrain for you, all within 90 minutes of downtown Reno.
Monday - November 12th (CONTINUED)
7:00 p.m. - 10:00 p.m. EBR-I 50th Anniversary Reception

Tuesday - November 13th
8:00 a.m. - 10:00 a.m. Spouse/Guest Hospitality
8:00 a.m. - 10:00 a.m. Plenary Session: Global Energy Perspectives - Part II
8:30 a.m. - 11:30 a.m. Technical Sessions-Topical Meeting: Practical Implementation of Nuclear Criticality Safety
8:30 a.m. - 11:30 a.m. Technical Sessions-Topical Meeting: Nuclear Applications in the New Millennium
9:00 a.m. - 12:00 p.m. Spouse/Guest Tour: Reno Artouring
10:00 a.m. - 11:30 a.m. Winter Meeting: Technical Sessions
10:00 a.m. - 6:00 p.m. Nuclear Technology Expo
11:30 a.m. - 1:00 p.m. ANS Honors and Awards Luncheon
1:00 p.m. - 4:00 p.m. Winter Meeting: Technical Sessions
1:00 p.m. - 4:00 p.m. Technical Sessions-Topical Meeting: Practical Implementation of Nuclear Criticality Safety
1:00 p.m. - 4:00 p.m. Technical Sessions-Topical Meeting: Nuclear Applications in the New Millennium
1:00 p.m. - 4:00 p.m. General Chair's Special Session: “Passing on Fifty Years of Fast Reactor Knowledge to a New Generation in Nuclear R&D”
3:00 p.m. - 5:00 p.m. Poster Session-Nuclear Applications in the New Millennium (in the Nuclear Technology Expo)
4:30 p.m. - 6:00 p.m. Beer Fest in Nuclear Technology Expo
6:30 p.m. - 10:30 p.m. Virginia City Saloon Party
7:00 p.m. - 9:00 p.m. Nuclear Criticality Safety Division Dinner
7:00 p.m. - 9:00 p.m. Nuclear Applications in the New Millennium Banquet

Wednesday - November 14th
8:00 a.m. - 10:00 a.m. Spouse/Guest Hospitality
8:00 a.m. - 10:00 a.m. ANS President's Special Session: “Hydrogen Systems: An Overview”
8:30 a.m. - 11:30 a.m. Technical Sessions-Topical Meeting: Practical Implementation of Nuclear Criticality Safety
8:30 a.m. - 11:30 a.m. Technical Sessions-Topical Meeting: Nuclear Applications in the New Millennium
10:00 a.m. - 11:30 a.m. Winter Meeting: Technical Sessions
11:30 a.m. - 1:00 p.m. MSTD Luncheon
1:00 p.m. - 4:00 p.m. Technical Tour: Desert Research Institute
1:00 p.m. - 4:00 p.m. Winter Meeting: Technical Sessions
1:00 p.m. - 4:00 p.m. Technical Sessions-Topical Meeting: Practical Implementation of Nuclear Criticality Safety
1:00 p.m. - 4:00 p.m. Technical Sessions-Topical Meeting: Nuclear Applications in the New Millennium
2:00 p.m. - 4:00 p.m. Board of Directors/Division Reports
4:30 p.m. - 11:45 p.m. Dinner Cruise on Lake Tahoe (Cruise at 6:30 p.m.)

Thursday - November 15th
8:30 a.m. - 11:30 a.m. Winter Meeting: Technical Sessions
8:30 a.m. - 11:30 a.m. Technical Sessions-Topical Meeting: Practical Implementation of Nuclear Criticality Safety
8:30 a.m. - 11:30 a.m. Technical Sessions-Topical Meeting: Nuclear Applications in the New Millennium

Friday - November 16th
9:30 a.m. - 4:00 p.m. DOE Nuclear Criticality Safety Program
Meeting Officials

Leon C. Walters
General Chair
Argonne National Laboratory - Idaho

Linda H. Hansen
Assistant General Chair
Argonne National Laboratory - Idaho

Douglas C. Crawford
Technical Program Chair
Argonne National Laboratory - Idaho

Maurice Ades
Assistant Technical Program Chair
Westinghouse Savannah River Company

Todd R. Allen
Assistant Technical Program Chair
Argonne National Laboratory - Idaho

Adolf Garcia
Assistant Technical Program Chair
U.S. Department of Energy

Gail Walters
Finance Chair and Technical Tour Chair
Argonne National Laboratory - Idaho

John Bennion
Student Program Chair
Idaho State University

Lori A. Braase
Special Events/Spouse Chair
Idaho National Engineering and Environmental Laboratory

Hosted by the Idaho Section of the American Nuclear Society.

The 2001 Winter Meeting is being held November 11-15, 2001, in Reno, Nevada. Two embedded topical meetings, “Practical Implementation of Nuclear Criticality Safety” and “Nuclear Applications in the New Millennium” along with the Student Mini-Conference and Nuclear Technology Expo, are being held in conjunction with the 2001 Winter Meeting.

ACCOMMODATIONS AND HOTEL INFORMATION
The Reno Hilton Hotel is the location for the 2001 Winter Meeting, where all meeting activities, technical sessions and governance committee meetings take place. The Reno Hilton Hotel is the largest hotel in Reno and Tahoe with 2,000 rooms. There are plenty of free-time options located right inside the property: a full shopping mall; a fully equipped health club; indoor and outdoor tennis courts, a fifty-lane bowling center, two movie theaters, the Hilton Bay Aqua Driving Range, and ten dining options.

LOCAL ATTRACTIONS
The Reno Hilton Hotel is located near many of Reno’s sights and attractions: Lake Tahoe; Downtown River Walk and Amphitheater; Victorian Square; Wilbur D. May Museum and Arboretum/Botanical Gardens; National Automobile Museum; National Bowling Stadium; Fleischman Planetarium; Nevada Museum of Art; Nevada Historical Society; Virginia City; Pyramid Lake and Ponderosa Ranch.

WORKSHOP FOR SCIENCE EDUCATORS
A workshop for science educators is being held on Saturday, Nov. 10, 2001, 8:00 a.m. - 5:00 p.m., in conjunction with the 2001 Winter Meeting. The materials and information will help 7th through 12th grade educators incorporate nuclear science topics into classroom programs.

Attendees will have a full day of hands-on activities and discussion with nuclear science educators and professionals. Each attendee will receive a CD-V700 Geiger counter, curriculum materials, and sources.

STUDENT ASSISTANCE PROGRAM
Attendance at the 2001 ANS Winter 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, Nov. 11th, 4:00-5:00 p.m. in Room N-6 of the Reno Hilton Hotel. Student assistants receive free meal 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 request form which can be found in the student headquarters room. Student travel assistance is provided through contributions from ANS professional divisions.

The student headquarters is located in Room N-12 of the Reno Hilton Hotel.

STUDENT MINI-CONFERENCE
This student meeting is being held Saturday, Nov. 10, and Sunday, Nov. 11th. Organized by the Student Sections Committee, the conference is open to all undergraduate and graduate students. Registration for the Student Mini-Conference is separate from, and in addition to, the full ANS Winter Meeting Registration.

FIRST-TIME ATTENDEE ORIENTATION
The ANS Membership Committee is offering an orientation session for the first-time ANS meeting attendees. Learn what goes on at national meetings, how to get involved at the national and local levels, and how the national organization works, both administratively and for its members. Whether you are attending as a new national or local member, or are moving into full membership from a student branch, come to the session. The session is being held from 1:00-1:30 p.m. on Sunday, Nov. 11th, in Room N-1 of the Reno Hilton Hotel. The Membership Committee invites you to attend and learn how to get involved and stay involved.

MENTORING PROGRAM
A special mentoring program is being held from 5:00-6:00 p.m. on Sunday, Nov. 11th in Room N-8 of the Reno Hilton Hotel. 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 meeting attendees, student members, new members, and those seeking career advancement and networking opportunities.

BOARD OF DIRECTORS/DIVISION REPORTS
Gail Marcus, ANS President, and Donald Hoffman, Chair of the Professional Divisions Committee, have scheduled this meeting to enhance the interaction between the Board of Directors and the Professional Divisions by highlighting division activities. The following Professional Divisions will present reports to the Board of Directors on Wednesday, Nov. 14th, 2:00-4:00 p.m. in the Ruby 1 & 2 rooms. This meeting is open to all attendees.

PRESENTATIONS:
1. Materials Science and Technology
   Carl Beyer, Chair
2. Radiation Protection and Shielding
   Larry Miller, Chair
3. Education and Training
   Bob Busch, Chair
4. Environmental Sciences
   Don Schultz, Chair
5. Isotopes and Radiation
   Ned Wogman, Chair
6. Aerospace, Technologies and Applications Technical Group
   Tom Larson, Chair

SPouse/GUEST HOSPITALITY
The Spouse/Guest Hospitality Room, Parlor #156, of the Reno Hilton Hotel is open from 8:00-10:00 a.m., Monday, Nov. 12th through Wednesday, Nov. 14th. Continental breakfast will be served each morning. Spouse/Guest registration is required for admittance to the hospitality room.

ATTENTION RUNNERS: FUN RUN (ORGANIZED BY NAYGN)
On Tuesday, Nov. 13th, there will be a noncompetitive run starting at 6:00 a.m. from the lobby of the Reno Hilton Hotel. Come prepared with running shoes to have fun for the fourth run of the new millennium.

ANS REGISTRATION
ANS Registration is located in the Nevada Foyer of the Reno Hilton Hotel on Saturday, Nov. 10th, through Thursday, Nov. 15th. Meetings and Workshop Registration, Speakers and Session Chair Desk and the Message Desk are also located in the ANS Registration area.

Registration is required for all attendees and presenters. Badges are required for admission to all technical sessions, workshops and events.
CONFERENCE LUNCHEONS

ATTENDEE LUNCHEON IN THE NUCLEAR TECHNOLOGY EXPO
Monday, November 12, 2001
11:30 a.m. - 1:00 p.m.
Exhibit Hall

One ticket for the attendee luncheon in the nuclear technology expo is included in the full meeting registration fee. Additional tickets may be purchased on-site at the ANS Registration Desk for $25 each.

HONORS & AWARDS LUNCHEON
Tuesday, November 13, 2001
11:30 a.m. - 1:00 p.m.
Room: Silver State 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 for the Honors and Awards Luncheon may be purchased on-site at the ANS Registration Desk for $28 each.

MSTD LUNCHEON
Wednesday, November 14, 2001
11:30 a.m. - 1:00 p.m.
Room: Ruby 1 & 2

Tickets may be purchased on-site at the ANS Registration desk for $28 each.

EVENING EVENTS

ANS PRESIDENT’S RECEPTION
Sunday, November 11, 2001
6:00 p.m. - 7:30 p.m.
Exhibit Hall

The ANS President’s Reception kicks off the meeting on Sunday, November 11th, in the Exhibit Hall of the Reno Hilton Hotel. Treat your taste buds to a sample of irradiated tropical fruits; such as pineapples, kiwis and mangos. One ticket to the ANS President’s Reception is included in the meeting registration fee.

Additional tickets can be purchased on-site at the ANS Registration Desk for $40 each.

EBR-I 50TH ANNIVERSARY RECEPTION
Monday, November 12, 2001
7:00 p.m. - 10:00 p.m.
Location: Silver State Pavilion

EBR-I produced the world’s first usable electricity from nuclear power on December 20, 1951. On that date the 1-MW NaK-cooled Experimental Breeder Reactor I, located at the INEEL in Idaho, lit four light bulbs. On December 21, 1951, the reactor supplied all the power needs of the building that houses the reactor. Subsequently, in 1953, EBR-I demonstrated proof of the breeding of 239Pu from 238U.

The long-term vision of the designers of EBR-I was that all uranium, not just a small portion of it, would serve humankind for millennia. Their vision was translated into the design and construction of twenty larger liquid metal cooled fast breeder reactors in several countries. Many of the design principles embodied in EBR-I are replicated in all modern fast reactors.

This event, fifty years ago, was truly the birth of the peaceful use of nuclear energy. The vision of the early pioneers who designed and operated EBR-I will undoubtedly become reality as humankind seeks abundant and environmentally responsible energy in the coming decades.

A reception and program will be held on Monday evening, November 12, to celebrate this momentous event.

Tickets can be purchased on-site at the ANS Registration Desk for $20.00 each. Each guest attending the reception will receive an attractive memento that depicts EBR-I and the four light bulbs that were lit on December 20, 1951.

VIRGINIA CITY SALOON PARTY
Tuesday, November 13, 2001
6:30 p.m. - 10:30 p.m.

Established in 1859, Virginia City became the richest mining town in the world. San Francisco was built from the mines of the Comstock, and the Civil War was partially financed from gold and silver discovered beneath the city. Today’s Virginia City is remarkably the same as it was during its heyday with wooden sidewalks, restored VIRGINIA CITY - will take you back in time 100 years to the site of the world’s richest silver strike and the largest historical district in the U.S.
mansions, mine tours, “Old West” saloons and the Piper Opera House. Virginia City is the perfect place for a good ‘ol fashioned saloon party held at the world famous Delta Saloon. After being whisked up Geiger Grade to Virginia City, you will be treated to cocktails and a western buffet dinner at the Delta. For entertainment, how about a toe-tappin’ western band to get your feet moving!

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

SPOUSE/GUEST TOURS
NOTE: All tours limited to 45 participants. Please refer to individual descriptions for guidelines and restrictions. Buses will leave promptly from the Reno Hilton Hotel lobby at specified time. Refunds cannot be provided for missing the departure bus.

THE DONNER MEMORIAL & NORTH LAKE TAHOE
Monday, November 12, 2001
10:00 a.m. - 3:00 p.m.
Departing Reno we will proceed through the scenic Sierra Nevada Mountains to the historic town of Truckee. Featured in America’s history of westward expansion, many early pioneers followed the Emigrant Trail through Truckee. Today, Truckee retains much of its old west flavor and historic charm. Nostalgic Commercial Row, lined with fine dining spots and quaint shops, offers the visitor a glimpse into history.

After driving through downtown Truckee, we will proceed to Donner Memorial State Park. The Donner Party was part of one of the early wagon trains coming across the country attempting to reach California. They ran into severe weather conditions and spent a desperate winter on the shores of Donner Lake. You will have an opportunity to view the museum and enjoy a presentation detailing this historic episode. If you desire, you may walk a short accessible hard surfaced trail viewing some of the important sightings.

Our tour continues past Squaw Valley, home of the 1960 Winter Olympics. You can see the “eternal flame” continuously ignited at the entrance.

Tahoe City will be our next stop. You will have an opportunity to shop at several shopping areas. After proceeding along the beautiful North Shore of Lake Tahoe, the tour will climb the Mount Rose Highway, including a stop at the spectacular Vista Point for one last breath-taking view of Lake Tahoe.

Tickets can be purchased on-site at the ANS Registration Desk for $47 each. (Lunch is included.)

Special Events & Spouse/Guest Tours

NUCLEAR CRITICALITY SAFETY DIVISION DINNER
Tuesday, November 13, 2001
7:00 p.m. - 9:00 p.m.
Location: Cafe Soleil
In association with the “Practical Implementation of Nuclear Criticality Safety” Embedded Topical, the Nuclear Criticality Safety Division (NCSD) will have a social gathering, Tuesday night, November 13th, at one of Reno’s best restaurants, Cafe Soleil. Cafe Soleil is located above Reno in the Sierra Foothills at McCarran & Caughlin Pkwy and has a great view of the city, casual atmosphere and unique dishes. NCSD will provide shuttle bus service to and from the restaurant.

Tickets can be purchased on-site at the ANS Registration Desk for $22 each.

NUCLEAR APPLICATIONS IN THE NEW MILLENNIUM – BANQUET
Tuesday, November 13, 2001
7:00 p.m. - 9:00 p.m.
Location: Crystal 3 & 4

Tickets can be purchased on-site at the ANS Registration Desk for $35 each.

Keynote speaker to be announced.

DINNER CRUISE ON LAKE TAHOE
Wednesday, November 14, 2001
4:30 p.m. - 11:45 p.m.
Experience a delightful evening dining and dancing on board one of Lake Tahoe’s paddlewheelers. The paddlewheeler features two climate controlled enclosed decks and an open promenade deck for panoramic viewing, and an expanded glass bottom viewing area. Begin the cruise with dinner as you cruise to Emerald Bay under a spectacular Lake Tahoe sunset. Enjoy a delicious dinner while being entertained by a live band playing all of the favorite tunes.

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

Bus transportation for all evening events, spouse/guest tours and technical tours will depart from and return to the south entrance (lobby level) of the Reno Hilton Hotel.
TECHNICAL TOUR
DESSERT RESEARCH INSTITUTE
Wednesday, November 14, 2001
1:00 p.m. - 4:00 p.m.

Created in 1959 by an act of the Nevada Legislature, the Desert Research Institute (DRI) was initially established as part of the University of Nevada. When the University of Nevada System was formed in 1968, the DRI became an autonomous, nonprofit division of the University and Community College System. Over its 40-year history, the DRI has grown to be one of the world's largest multidisciplinary environmental research organizations.

GREAT BASIN ENVIRONMENTAL RESEARCH LABORATORY
The Great Basin Environmental Research Laboratory (GBERL) was developed by the DRI as a multidisciplinary research facility for the study of plant, ecosystem and biosphere function, and global environmental change. It is located in Reno, Nevada, USA where 300+ days of sunshine per year, moderate temperatures and low atmospheric humidity provide an ideal climate setting for the facility.

Participate in a technical tour of the DRI featuring its renewable hydrogen, fuel cell, test facility and the GBERL.

Tickets can be purchased on-site at the ANS Registration Desk for $20 each.

PICTURES:
Top–DRI Solar Wind Generators
Middle–Interior View of the Frits Went Laboratory Glasshouse showing the four Ecologically Controlled Enclosed Lysimeter Laboratories
Bottom–East side of the GBERL

SESSIONS BY TRACK (Asterisks indicate special sessions)

SPECIAL SESSIONS
*ANS Plenary: Global Energy Perspectives—I, Mon. a.m.
*ANS Plenary: Global Energy Perspectives—II, Tues. a.m.
*General Chair’s Special Session: Passing on 50 yr of Fast Reactor Knowledge to a New Generation in Nuclear R&D—Panel, Tues. p.m. (1:00-3:00 p.m.)
*ANS President’s Special Session: Hydrogen Systems—An Overview—Panel, Wed. a.m.

TRACK 1: Nuclear Energy Research and Development
R&D for New Fuel Types, Tues. a.m.

TRACK 2: Emerging Nuclear Energy Technologies
Gen IV Nuclear Technologies, Mon. a.m.
T-H of Gen IV Reactors/NERI Project Summary Results, Mon. a.m.
Lead-Cooled Reactors: Neutronics & Plant Engineering, Mon. p.m.
*Methologies for Evaluating Proliferation Risk of Nuclear Fuel Cycles—Panel, Mon. p.m.
*Safety Considerations in Gen IV Nuclear Power Systems—Panel, Mon. p.m.
Advances in Nuclear Fuels & Materials, Tues. a.m.

Gen IV Roadmap—I, Tues. a.m.
*Gen IV Roadmap—II, Tues. p.m.
Lead-Cooled Reactors: The ENHS, Tues. p.m.
*Developments in Nonproliferation Technology, Tues. p.m.
*Technological, Safety & Environmental Aspects of Hydrogen Production & Use—Panel, Tues. p.m.
*HTGRs: Innovative Designs—I—Panel, Wed. a.m.
*HTGRs: Innovative Designs—II—Panel, Wed. p.m. (1:00-2:30 p.m.)
*Closing the Public Information Cycle on Waste—Panel, Wed. p.m.
PBM R, Wed. p.m. (2:35-6:00 p.m.)
Concept Design & Physics Analysis of Gen IV Nuclear Energy Systems, Thurs. a.m.

TRACK 3: Environment, Safety, and Health
Nuclear Installations Safety: General, Mon. a.m.
Developments in Severe Accident Safety Analyses, Mon. a.m.
Recent Advances in Monitoring Radionuclides in Environmental Media, Mon. a.m.
*Insights & Advances from the AESJ/ANS Embedded Topical Meeting on Safety Goals & Safety Culture (Milwaukee, WI, June 2001)—Panel, Mon. p.m.
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<td>*Recent Developments in the Economic Deregulation of Nuclear Power-Panel, Mon. a.m.</td>
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<td>*California Electricity Crisis: How Can Nuclear Help?—Panel, T ues. a.m.</td>
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<td>*Financing Models for New Nuclear Generation—Panel, Wed. a.m.</td>
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<tr>
<td>*Early Site Permits: First Step to the Next Generation—Panel, Wed. a.m.</td>
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<th>Track 5: Nuclear Science and Technology</th>
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<td>*T-H Code Development/Applications—I, Mon. a.m.</td>
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<tr>
<td>*T-H Code Development/Applications—II, Mon. p.m.</td>
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<td>The University Research Program in Robotics, Mon. a.m.</td>
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<td>Radiation Transport Methods &amp; Dose Calculations, Mon. p.m.</td>
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<td>*Radiation Metrology, Nuclear Data, &amp; Reminiscences: A Special Session Honoring Dr. Richard Helmer, Mon. p.m.</td>
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<td>*Reactor Physics, Mathematics, &amp; Computations: The Legacy of Allan F. Henry, Mon. p.m.</td>
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<td>Computational Fluid Dynamics &amp; Heat Transfer—I, T ues. a.m.</td>
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<td>*Computational Fluid Dynamics &amp; Heat Transfer—II, T ues. p.m.</td>
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<td>*ANS Joint Benchmark Effort, T ues. a.m.</td>
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<td>Reactor Physics: General—I, T ues. a.m.</td>
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<td>Reactor Physics: General—II, Wed. a.m.</td>
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<td>*Advanced Nodal Methods: The Legacy of Allan F. Henry, T ues. p.m.</td>
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<td>Materials Compatibility in Liquid-Metal Coolants—I, Wed. a.m.</td>
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<td>Materials Compatibility in Liquid-Metal Coolants—II, Wed. p.m.</td>
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<td>General Two-Phase Flow—I, Wed. a.m.</td>
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<td>General Two-Phase Flow—II, Wed. p.m.</td>
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<td>*Current Issues in Computational Methods—Roundtable, Wed. a.m.</td>
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<th>Track 6: Legacy Management: Decommissioning, Spent Fuel, and Waste</th>
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<td>*Recent Developments in the Economic Deregulation of Nuclear Power-Panel, Mon. a.m.</td>
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<td>*Early Site Permits: First Step to the Next Generation—Panel, Wed. a.m.</td>
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<td>Reactor Physics Design, Validation, &amp; Operating Experience, Mon. a.m.</td>
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<td>The D O E N EPO Program, Mon. p.m.</td>
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<td>Research, Development, &amp; Emerging Techniques for Power Reactors, Wed. p.m.</td>
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<td>*Physics Testing in Commercial Reactors, Wed. p.m.</td>
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<th>Track 8: Nonpower and Radiation Applications</th>
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<tr>
<td>*Nonpower Reactors, T ues. a.m.</td>
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<td>*Radioanalytical Methods for Industrial Applications—I, T ues. a.m.</td>
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<td>*Radioanalytical Methods for Industrial Applications—II, T ues. p.m.</td>
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<tr>
<td>Biology &amp; Medicine: General, Wed. a.m.</td>
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<td>Isotopes &amp; Radiation: General, Thurs. a.m.</td>
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<tr>
<th>Track 9: Education, Policy, and Public Information</th>
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<tr>
<td>*Food Irradiation Studies &amp; Application 2001—Panel, Mon. a.m.</td>
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<td>*Training, Human Performance, &amp; Workforce Development, T ues. p.m.</td>
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<tr>
<td>*ANS &amp; ASEE: Working Together to Build the Nuclear Engineering Workforce-Panel, Wed. p.m.</td>
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*Room Hours: 8:00-10:00 a.m., 10:00-11:30 a.m., 1:00-4:00 p.m.*
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<tr>
<th>Room</th>
<th>Wednesday, November 14th</th>
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<td>Reactor Physics: General—II</td>
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<td>N-1</td>
<td>Materials Compatibility in Liquid-Metal Coolants—I</td>
<td>Materials Compatibility in Liquid-Metal Coolants—II</td>
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<tr>
<td>N-2</td>
<td>*Closing the Public Information Cycle on Waste—Panel</td>
<td>Research, Development, &amp; Emerging Techniques for Power Reactors</td>
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<td>N-3</td>
<td>General Two-Phase Flow—I</td>
<td>General Two-Phase Flow—II</td>
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<td>N-5</td>
<td>Research, Development, &amp; Emerging Techniques for Power Reactors</td>
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<td>N-6</td>
<td>Recent Developments in Emergency Preparedness &amp; Response</td>
<td>Source Term &amp; Accident Analysis</td>
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<td>N-7</td>
<td>*Hot Topics &amp; Emerging Issues—Panel</td>
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<td>Calculations of Decay Heat &amp; Radionuclide Inventories</td>
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<td>*Financing Models for New Nuclear Generation—Panel</td>
<td>*ANS &amp; ASEE: Working Together to Build the Nuclear Engineering Workforce—Panel</td>
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<td>N-10</td>
<td>Biology &amp; Medicine: General</td>
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#### Special Sessions
- **ANS Plenary: Global Energy Perspectives—I**, Mon. a.m.
- **ANS Plenary: Global Energy Perspectives—II**, Tues. a.m.
- **General Chair’s Special Session: Passing on 50 yr of Fast Reactor Knowledge to a New Generation in Nuclear R&D—Panel**, Wed. a.m.
- **ANS President’s Special Session: Hydrogen Systems—An Overview—Panel**, Wed. a.m.

#### Accelerator Applications (AAD)
- (Materials Compatibility in Liquid-Metal Coolants— I, Wed. a.m.)

#### Biology and Medicine (BMD)
- (Radiation Metrology, Nuclear Data, & Reminiscences: A Special Session Honoring Dr. Richard Helmer, Mon. p.m.)
- (Radioanalytical Methods for Industrial Applications—I, Tues. a.m.)
- (Radioanalytical Methods for Industrial Applications—II, Tues. p.m.)

#### Decommissioning, Decontamination, and Reutilization
- Incorporation of Lessons Learned for D&D of Commercial Reactors to Next-Generation Nuclear Reactor Systems—Panel, Mon. a.m.
- *D&D Science & Technology: Decontamination & Dismantlement—Papers/Panel, Mon. p.m.*
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- *Technological, Safety, & Environmental Aspects of Hydrogen Production & Use—Panel, Tues. p.m.*
- Recent Developments in Emergency Preparedness & Response, Wed. a.m.
- *(The Potential Roles of Nuclear-Produced Hydrogen in the Future Energy Mix—Panel, Wed. p.m.)*

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- *(Developing an Integrated Vision for Environmental Security & Safety in Nuclear Power Development—Panel, Thurs. a.m.)*

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- Developments in Modeling of Radionuclides & Heat Transport, Thurs. a.m.
- (Radiation-Based Nondestructive Testing Techniques & Applications, Thurs. a.m.)

#### Human Factors (HFD)
- (Developments in Severe Accident Safety Analyses, Mon. a.m.)
- *Food Irradiation Studies & Application 2001—Panel, Mon. a.m.*
- *(Insights & Advances from the AESJ/ANS Embedded Topical Meeting on Safety Goals & Safety Culture—Panel, Milwaukee, WI, June 2001—Panel, Mon. p.m.)*
- *(Safety Considerations in Gen IV Nuclear Power Systems—Panel, Mon. p.m.)*
- *(Data, Analysis, & Operations for NCS, Tues. p.m.)*
- *(Training, Human Performance, & Workforce Development, Tues. p.m.)*
- *(HTRs: Innovative Designs—I—Panel, Wed. a.m.)*
- *(HTRs: Innovative Designs—II—Panel, Wed. p.m., [1:00-2:30 p.m.])*
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- *(Nuclear Analytical Chemistry Methods, Wed. p.m.)*
(Radiation-Based Nondestructive Testing Techniques & Applications, Thurs. a.m.)
Isotopes & Radiation: General, Thurs. a.m.

Materials Science and Technology (MSTD)
(Gen IV Nuclear Technologies, Mon. a.m.)
(Lead-Cooled Reactors: Neutronics & Plant Engineering, Mon. p.m.)
(The DOE NEPO Program, Mon. p.m.)
Advances in Nuclear Fuels & Materials, Tues. a.m.
(R&D for New Fuel Types, Tues. a.m.)
(Gen IV Roadmap—I, Tues. a.m.)
(*Gen IV Roadmap—I, Tues. p.m.)
(Lead-Cooled Reactors: The ENHS, Tues. p.m.)
Materials Compatibility in Liquid-Metal Coolants—I, Wed. a.m.
Materials Compatibility in Liquid-Metal Coolants—I, Wed. p.m.

Mathematics and Computation (MCD)
(Radiation Transport Methods & Dose Calculations, Mon. p.m.)
*Reactor Physics, Mathematics, & Computations: The Legacy of Allan F. Henry, Mon. p.m.
(*ANS Joint Benchmark Effort, Tues. a.m.)
*Advanced Nodal Methods: The Legacy of Allan F. Henry, Tues. p.m.
*Current Issues in Computational Methods: Roundtable, Wed. a.m.
Mathematical Modeling: General, Thurs. a.m.
(Radiation-Based Nondestructive Testing Techniques & Applications, Thurs. a.m.)

Nuclear Criticality Safety (NCSD)
Data, Analysis, & Operations for NCS, Tues. p.m.
(Calculations of Decay Heat & Radionuclide Inventories, Wed. a.m.)

Nuclear Installations Safety (NISD)
Nuclear Installations Safety: General, Mon. a.m.
Developments in Severe Accident Safety Analyses, Mon. a.m.
(Gen IV Nuclear Technologies, Mon. a.m.)
(*Recent Developments in the Economic Deregulation of Nuclear Power-Panel, Mon. a.m.)
*Insights & Advances from the AESJ/ANS Embedded Topical Meeting on Safety Goals & Safety Culture [Milwaukee, WI, June 2001]—Panel, Mon. p.m.
*Safety Considerations in Gen IV Nuclear Power Systems—Panel, Mon. p.m.
*Recent Developments in Emergency Preparedness & Response, Tues. a.m.

(Biology & Medicine: General, Wed. a.m.)
PSA, Wed. p.m.
(Source Term & Accident Analysis, Wed. p.m.)
*Developing an Integrated Vision for Environmental Security & Safety in Nuclear Power Development—Panel, Thurs. a.m.
(*Control Room Habitability—Panel, Thurs. a.m.)
*Risk-Informed Regulation Pilot Projects to Reclassify Structures, Systems, & Components: First Results, Thurs. a.m.

Operations and Power (OPD)
Gen IV Nuclear Technologies, Mon. a.m.
*Recent Developments in the Economic Deregulation of Nuclear Power-Panel, Mon. a.m.
(*Incorporation of Lessons Learned for D & D of Commercial Reactors to Next-Generation Nuclear Reactor Systems—Panel, Mon. a.m.)
Lead-Cooled Reactors: Neutronics & Plant Engineering, Mon. p.m.
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The DOE NEPO Program, Mon. p.m.
(Advances in Nuclear Fuels & Materials, Tues. a.m.)
Gen IV Roadmap—I, Tues. a.m.
*Gen IV Roadmap—I, Tues. p.m.
*Nonpower Reactors, Tues. a.m.
*California Electricity Crisis: How Can Nuclear Help?—Panel, Tues. a.m.
Lead-Cooled Reactors: The ENHS, Tues. p.m.
(Reactor Safety: General, Tues. p.m.)
(*DOE Facility Safety Culture: Lessons Learned from the 11th Annual EFCOG SAWG Workshop—Panel, Wed. a.m.)
*HTGRs: Innovative Designs—I—Panel, Wed. a.m.
*HTGRs: Innovative Designs—II—Panel, Wed. p.m. (1:00-2:30 p.m.)
*Financing Models for New Nuclear Generation—Panel, Wed. a.m.
*Biology & Medicine: General, Wed. a.m.
Early Site Permits: First Step to the Next Generation—Panel, Wed. a.m.
(PSA, Wed. p.m.)
PBM R, Wed. p.m. (2:35-6:00 p.m.)
Research, Development, & Emerging Techniques for Power Reactors, Wed. p.m.
(Source Term & Accident Analysis, Wed. p.m.)
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(*Physics Testing in Commercial Reactors, Wed. p.m.)
*Control Room Habitability—Panel, Thurs. a.m.
(*Risk-Informed Regulation Pilot Projects to Reclassify Structures, Systems, & Components: First Results, Thurs. a.m.)

Radiation Protection and Shielding (RPSD)
(Recent Advances in Monitoring Radionuclides in Environmental Media, Mon. a.m.)
Radiation Transport Methods & Dose Calculations, Mon. p.m.
*ANS Joint Benchmark Effort, Tues. a.m.)
For these reasons, the ANS 2001 Meeting Organizing Committee has structured the plenary sessions to provide both a retrospective on the history of nuclear power, the drivers shaping our evolving energy system, the potential role of nuclear-derived hydrogen, and the shape of R&D needed to allow the promise.

**Welcome and Opening Remarks:**
Gail Marcus, President, American Nuclear Society
Leon Walters, General Chair, 2001 Winter Meeting

**Speakers:**
The First Fifty Years of Nuclear Power and the Next, Leonard Koch, Associate Project Engineer EBR-I, Project Manager EBR-II
The Energy System: Its Architecture, Trajectory and Future Role of Nuclear-Derived Hydrogen, David Scott, Founding Director, Institute for Integrated Energy Systems (Univ of Victoria-Canada)/Vice-President for the Americas (International Association for Hydrogen Energy)

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### Sessions by Day

**Monday, November 12 • 8:00 a.m.**

**ANS Plenary: Global Energy Perspectives—I, Session Organizers Leon Walters (ANL), David Scott (Univ of Victoria-Canada/IAHE).** All invited. Chair: Leon Walters

**Hilton Theater**
8:00 a.m.

From the vantage of 2050—perhaps sooner—the ANS meeting of 2001 may come to be seen as the turning point for the nuclear industry. The Bush Administration has clearly stated that the continuing use of nuclear power and its further deployment must be part of any rational energy planning. Moreover, although the United States has not joined other nations in endorsing the Kyoto Protocol specifics, reducing greenhouse emissions must be central to any sustainable energy policy. For any hope of significant greenhouse gas reduction, nuclear power is required.

With so much promise on the horizon—promise built upon the genius and perseverance in the past—the four speakers for our two plenary sessions have been selected for their unique perspectives on the history of nuclear power, the drivers shaping our evolving energy system, the potential role of nuclear-derived hydrogen, and the shape of R&D needed to allow the promise.

## Sessions by Day

### Monday, November 12 • 10:00 a.m.

**Nuclear Installations Safety: General**, sponsored by NISD. Session Organizer: Chip Martin (DNFSB). Chair: Chip Martin

- **N-1**
  - **10:00 a.m.**
  - Crisis Learning in the United States Nuclear Power Generation Industry, William R. Corcoran (NSRC)
  - **10:30 a.m.**
  - Design of a New Irradiation Facility for the HFIR, J. J. Carbajo, A. L. Qualls (ORNL)
Developments in Severe Accident Safety Analyses, sponsored by NISD; cosponsored by HFD. Session Organizer: Joseph Green (SWEC). Chair: Joseph Green

N-2
10:00 a.m.
Application of Dryout Heat Flux Model to Cavity Debris Heat Transfer, Soo-Yong Park, Dong-Ha Kim (KAERI–Korea)

10:20 a.m.
Simulation of Hydrogen Behavior with the CONTAIN Code, Gregor Bobovnik, Ivo Kljenak (Jozef Stefan Inst–Slovenia)

10:40 a.m.
A Feasibility Study of Eliminating Emergency Planning Zone for APR-1400, Young Wook Lee, Joo Hyun Moon, Mee Jang, Chang Sun Kang (Seoul Natl Univ–Korea)

11:00 a.m.
Potential Advantages for a Particle-Weighted, Dual-Depletion Plume Model, Clifford P. Blackman, Jr. (Georgia DNR)

Advances in Treatment of High-Level Wastes, sponsored by FCWM D. Chairs Karen Toews (ANL-Idaho), Karl Robert Umstadter (Archimedes Technol)

N-3
10:00 a.m.

10:30 a.m.
Development of the MEDEC Technology for Treatment of Sodium-Bonded Spent Nuclear Fuel, Karen L. Toews, Steven D. Herrmann, Robert G. Pahl, Claude Nielsen (ANL-Idaho)

11:00 a.m.
Monitoring the Consistency of Multiphase Waste Forms, William L. Ebert (ANL), Stephen G. Johnson (ANL-Idaho), Michele A. Lewis (ANL)

Generation IV Nuclear Technologies, sponsored by OPD; cosponsored by MSTD, NISD, RPD. Session Organizer: Buzz Savage (JUPITER Corp). Chair: Buzz Savage

N-4
10:00 a.m.
Hydrogen Markets and Futures for Nuclear Power, Charles W. Forsberg (ORN L), K. Lee Peddicord (Texas A&M)

10:20 a.m.
Advanced High-Temperature Reactor: Molten Salt Coolant and Graphite Fuel, Charles W. Forsberg (ORNL), Paul S. Pickard (SNL)

10:40 a.m.

11:00 a.m.
A Case for the Manufactured Nuclear Power Plant, Raymond W. Durante (Durante Assoc)
Radioactive Xenon Measurements by Automatic Systems, Joachim Schulze (CTBTO–Austria)

Environmental Sampling and Detection of Radioxenons, James C. Hayes, Theodore W. Bowyer, Tom Hembigner, Justin I. McIntyre, Mark E. Panisko (PNNL)

*Recent Developments in the Economic Deregulation of Nuclear Power–Panel, sponsored by OPD; cosponsored by NISD. Session Organizer: Donna Skay (NRC). All invited. Chair: Donna Skay

N-8
10:00 a.m.
Panelists:
- Peter Wong (ISO New England)
- Geoff Rothwell (Stanford)
- Marc Potkin (Entergy Northeast)

The University Research Program in Robotics, sponsored by RRSD; cosponsored by ETD. Session Organizer: James S. Tulenko (Univ of Florida). Chair: Gregory D. Teese (Westinghouse SRC)

N-10
10:00 a.m.
University Research Program in Robotics, James Tulenko (Univ of Florida), David Wehe (Univ of Michigan), Delbert Tesar (Univ of Texas, Austin), Mongi Abidi (Univ of Tennessee), John Wood (Univ of New Mexico)

10:20 a.m.
Kinematic Design of a 6-6 Parallel Mechanism, Shannon C. Ridgeaway, Carl D. Crane (Univ of Florida)

10:40 a.m.
Robotic Grasp Planning Using Neuro-Fuzzy Techniques, G. Starr, R. Lumia, J. Wood, Y. Liu (Univ of New Mexico)

11:00 a.m.
Research Program for the Design and Development of Wireless Components for Radiation Environments, James Tulenko, James Kurtz, Dean Schonfeld (Univ of Florida)


N-11
10:00 a.m.
Irradiated food is appearing more frequently on grocery shelves and restaurant menus. Such food includes irradiated meal items, beef and poultry, and produce. This panel will feature speakers discussing current human factors research in the United States and other countries that pertains to the ways that knowledge of human factors can improve food displays, menu descriptions, and customer information. Also included will be any practical experience of the speakers on the results of applying these human factors research findings in the food market and restaurant.

Panelists to be determined.

Reactor Physics Design, Validation, and Operating Experience, sponsored by RPD. Chair: Brian N. Aviles (KAPL)

McKinley
10:00 a.m.
Axial Offset Anomaly Prediction Using the EPRI CORETRAN Code, Richard J. Weader II, Barbara Y. Hubbard, Richard J. Cacciapouti (Duke Eng, Marlborough)

10:20 a.m.
Development of Axially Variable Strength Control Rods for the Power Maneuvering of PWRs, Ung-Soo Kim, Poong-Hyun Seong (KAIST–Korea)

10:40 a.m.
Validation of Radial Power Profile in FRAPCON-3 by Monte Carlo Method, G. S. Chang, R. C. Pedersen (INEEL)

11:00 a.m.
Technical Issues on Nuclear Design for Fission Moly Target, Dong-Keun Cho, Myung-Hyun Kim, (Kyung Hee Univ–Korea)

MONDAY, NOVEMBER 12 • 1:00 P.M.


N-1
1:00 p.m.
Panelists:
- Brian K. Grimes (Grimes Consult)
- Harold B. Ray (SCE)
- Robert J. Budnitz (FRA)

Other panelists to be determined.

Lead-Cooled Reactors: Neutronics and Plant Engineering, sponsored by OPD; cosponsored by MSTD. Session Organizer: Jacopo Buongiorno (INEL). Chair: Philip MacDonal (INEL)

N-2
1:00 p.m.
Analysis of Uranium and Thorium Fuels in Lead-Bismuth Eutectic (LBE) Cooled Reactors, Kevin D. Weaver, J. Stephen Herringer, Philip E. MacDonal (INEL)

1:25 p.m.
Challenges of Minor Actinide Burning in Critical Lead-Bismuth Cooled Reactors, P. Héjzlar, N. E. Todreas, M. S. Kazimi, J. J. Driscoll (MIT)
1:50 p.m.
Some Characteristics of LBE-Cooled Long-Life Small Fast Reactor LSPR, Hiroshi Sekimoto, Shinichi Makino (Tokyo Inst Technol-Japan), Kunihiro Nakamura, Yoshio Kamishima (ARTECH-Japan), Takashi Kawakita (MHI-Japan)

2:15 p.m.
Power Increase in the STAR-LM Generation IV HLMC Reactor, J. J. Sienicki, B. W. Spencer (ANL)

2:40 p.m.
Temperature Limits for Heavy-Liquid-Metal Reactor Vessels, Jacopo Buongiorno (INEEL)

3:05 p.m.

3:30 p.m.
Removal of Polonium Contamination on Quartz Glass by Baking, Toru Obara, Yoshiyuki Fujita, Yasuo Ando, Hiroshi Sekimoto (Tokyo Inst Technol-Japan)

**Methodologies for Evaluating Proliferation Risk of Nuclear Fuel Cycles—Panel**, sponsored by FCWM D. Session Organizer: Tom Sanders (SNL). All invited. Chair: Robert Versluis (DOE, Germantown)

N-3
1:00 p.m.
**Panelists:**
- Jean-Claude Guais (COGEMA, Bethesda)
- Nikolai N. Ponomarev-Stepnoi (Kurchatov RRC–Russia)
- Michael W. Golay (MIT)
- James H asberger (LLNL)
- John Tseng (DOE, Germantown)
- Nancy Slater-Thompson (DOE)
- David W. Crawford (DOE, Germantown)

**Safety Considerations in Generation IV Nuclear Power Systems—Panel**, sponsored by NISD; cosponsored by HFD, OPD, RPD. Session Organizers Joseph Green (SWEC), Linda Hansen (ANL-Idaho). All invited. Chair: Stephen C. Rosen (Rosen Consult)

N-4
1:00 p.m.
The U.S. Department of Energy Nuclear Energy Plant Optimization Program, sponsored by OPD; cosponsored by MSTD. Session Organizer: Buzz Savage (JUPITER Corp). Chair: B. P. Singh (DOE, Germantown)

N-5
1:00 p.m.
The Nuclear Energy Plant Optimization Program, B. P. Singh (JUPITER Corp), T. R. Allen (ANL-Idaho)

1:30 p.m.
Residual Lifetime Estimates for Cable Materials from the Wear-Out Approach, Kenneth T. Gillen, Mat Celina, Robert Bernstein (SNL)

2:00 p.m.
Using Wavelet Analysis in Eddy Current Steam Generator Inspection, Nela Zavaljevski, Sasan Bakhtiar, David S. Kupperman (ANL)

2:30 p.m.
Finite-Element Modeling of Eddy-Current Probe for NDE of Steam Generator Tubes, Jimmy F. C. Chang, Sasan Bakhtiar (ANL)

3:00 p.m.
Guidelines for Hybrid Control Rooms in Nuclear Power Plants, Joseph Naser (EPRI), B. P. Singh (DOE, Germantown)


N-6
1:00 p.m.

1:30 p.m.
Implementation of Improved Moderator Direct Heating Model in TRAC/BF1-ENTRÉE, Akitoshi Hotta (Toden Software–Japan), Takafumi Anegawa (TEPCO-Japan)

2:00 p.m.
RELAP5 Calculations of a Natural Circulation Stepped Inventory Reduction Test, Abd Y. Lafi, José N. Reyes, Jr. (Oregon State Univ)

2:30 p.m.

3:00 p.m.
Improvement of the Two-Phase Water Level Tracking Model and Its Implementation into the Next-Generation Thermal-Hydraulic Code TRAC-M, S. Lu (NR)

3:30 p.m.
RELAP5 Analyses for the Simulated 0.09 m² APEX-CE M SLB, Abd Y. Lafi, José N. Reyes (Oregon State Univ)

**Geographic Information Systems Application in the Nuclear Industry**, sponsored by ESD. Session Organizer: Jim Bollinger (Westinghouse SRC). Chair: Linda Bauer (BWXT Svc)

N-7
1:00 p.m.
The Incorporation of GIS in Radiological Transportation Accident Consequence Assessments, B. M . Biwer, D. J. LePoire, J. A. Kuiper, S. Y. Chen (ANL)

1:30 p.m.
Development of an Open Platform System for Environmental Pathway Analysis, David J. LePoire, John J. Arnish, Emmanuel Gnanapragasam, S. Y. Chen (ANL)

2:00 p.m.
GIS in the Savannah River Site Groundwater Protection Program, John K. Reed, Jim Scott Bollinger (Westinghouse SRC)

2:30 p.m.
GIS-Based Groundwater and Soils Geochemistry Analysis, Jim Scott Bollinger (Westinghouse SRC)
1:00 p.m.  •  Undergraduate Category
Exploring Liquid Metal as a Gap Filler for BWR Fuel Pins, Doonyapong Wongsawaeng, David Cash, Ivory Byers, Brian Tran (Univ of California, Berkeley)

1:30 p.m.  •  Graduate Category
Modular Lead-Bismuth Eutectic Reactor (MLBER) Design Concept, Wesley Williams, Ke Zhao, Bao Fu Lu, Andrew Szafielski, Peter Kim (Univ of Tennessee) [Laurence Miller (Advisor)]

3:00 p.m.
Concluding remarks by judges and announcement of contest results.


N-10  •  3:35-5:00 p.m.
3:35 p.m.
SAT "Lite": A Cost-Effective Use of the Systematic Approach to Training, Ronald J. Bruno (Exitech), Richard P. Coe (Richard Stockton Coll)

Panel Discussion

PANELISTS:
- Andrei Kossilov (IAEA–Austria), 2001 ANS/ETD Training Excellence Award Recipient
- Ronald J. Bruno (Exitech), 2001 ANS/ETD Training Excellence Award Recipient

NOTE: This session will immediately follow the preceding session, which begins at 1:00 p.m. in the same room.


N-11
1:00 p.m.
The Joys of Doing Precise Spectrometry and Data Evaluation, R. G. Helmer (Idaho State Univ)

1:30 p.m.
Superallowed $0^+\rightarrow0^+$ Beta Decay: Probing the Weak Force, J. C. Hardy (Texas A&M)

2:00 p.m.
"Nuclear Light": What Is It? Has It Been Seen?, C. W. Reich (INEEL)

2:30 p.m.
From Data Evaluation to Research, E. Browne (LBNL)

The following entries were selected by a panel of judges from industry as finalists in the 2001 Student Design Competition. Oral Presentations will be made by students in front of a second panel of judges who will determine the winner in each category.
3:00 p.m.
Participation in Radiation Metrology Measurements: $^{252}$Cf v Bar, $^{54}$Mn H @-Life, $^{93}$Nb P$_{1/2}$ and $^{238}$Ra P$_{1/2}$ (186), R. J. Gehrke (INEEL)

3:30 p.m.
Measurement of Absolute $\gamma/\beta$ Ratios, Henry C. Griffin (Univ of Michigan), Chandana Sumithrarachchi (Eastern Michigan Univ)


McKinley
1:00 p.m.
Al Henry—A Civilized Engineer, John J. Taylor (EPRI, emeritus), Stan Kaplan (Bayesian Syst)

1:20 p.m.
The Technical Heritage from Al Henry’s Years at Bettis, M. Natelson, L. R. Foulke (BAPL)

1:40 p.m.
Dynamic Versus Static Reactivity: It Does Matter, Brian N. Aviles, Thomas F. DeLorey (LMC)

2:00 p.m.
Three-Dimensional Reactor Kinetics Calculation in Analytic Function Expansion Nodal Method, Nam Zin Cho, Do Sam Kim, Kyung Taek Lee (KAIST–Korea)

2:20 p.m.
Application of a Two-Level Acceleration Method to the Pin-by-Pin Multigroup SP$_3$ Approximation, Chang-Ho Lee, T. J. Downar (Purdue Univ)

2:40 p.m.
P$_L$ Moments of the Mass-One Free Gas Scattering Kernel, M. L. Zerkle (BAPL)

3:00 p.m.
Limiting Properties of the Response Matrix Method Partial Current Eigenvalue, Yovan D. Lukic (APS, Tonopah)

3:20 p.m.
The Role of the Henry Factorization in Neutron Noise Diagnostics, Imre Pazsit (Chalmers Univ of Technol–Sweden)

TUESDAY, NOVEMBER 13 • 8:00 A.M.

*ANS Plenary: Global Energy Perspectives—II, Session Organizers Leon Walters (ANL), David Scott (Univ of Victoria, Canada/IAHE). All invited. Chair: Leon Walters

Hilton Theater
8:00 a.m.
INTRODUCTIONS:
Leon Walters, General Chair, 2001 Winter Meeting

SPEAKERS:
• Global Energy Perspectives, Environmental Concerns, and Technological Opportunities, Hans-Holger Rogner (IAEA-Austria/Intergovernmental Panel on Climate Change)
• National Energy Planning for the Century, Chauncey Starr, President Emeritus, EPRI

There will be a question-and-answer session after the last presentation involving speakers from both Parts I and II of Global Energy Perspectives.

TUESDAY, NOVEMBER 13 • 10:00 A.M.

Advances in Nuclear Fuels and Materials, sponsored by MSTD; cosponsored by FCWM D, OPD. Session Organizer: James S. Tulenko (Univ of Florida), Carl Beard (Univ of Texas, Austin). Chair: Ronald Ballinger (MIT)

N-2
10:00 a.m.
Development of N-Type Diamond Semiconductor Through Field Enhanced Diffusion by Optical Activation, Dickerson C. Moreno, M. P. Pelayos, T. K. Ghosh (Univ of Michigan, Columbia)

10:30 a.m.
A Fission Gas Release Model for High Burnup ThO$_2$-UO$_2$ Fuel, Y. Long, Y. Yuan, M. S. Kazimi, R. G. Ballinger (MIT)

11:00 a.m.
Effects of Rim Microstructure on High Burnup UO$_2$ Fuel Performance, Chan Bock Lee, Dae Heon Kim, Je Geon Bang, Young Min Kim, Yong Sik Yang, Youn Ho Jung (KAERI–Korea)

Research and Development for New Fuel Types, sponsored by FCWM D; cosponsored by MSTD, RPD. Session Organizer: John Dewes (Westinghouse SRC). Chair: Martin Grossbeck (ORNL)

N-3
10:00 a.m.
Enhanced Performance of Burnable Poisons by Isotope Separation, M. L. Grossbeck, J.-P. A. Renier (ORNL)

10:20 a.m.
Feasibility of Using Mixed Plutonium Dioxide and Thorium Dioxide in LWR and M PBR, Zeev Shayer (SAIC, Englewood)

10:40 a.m.

11:00 a.m.
Double-Strata High Burnup Fuel Performance in LWR, Vladimir Barchevtsev, Vladimir Artisyuk, Hisashi Ninokata (Tokyo Inst Technol–Japan)

Research and Development for New Fuel Types, sponsored by MSTD, RPD. Session Organizer: John Dewes (Westinghouse SRC). Chair: Martin Grossbeck (ORNL)

N-4
10:00 a.m.
Technology Goals for Generation IV Nuclear Energy Systems, Sol Levy (Levy Assoc), Neil Todreas (MIT), Ralph Bennett (INEEL), William Magwood IV (DOE)

10:30 a.m.
The Generation IV Technology Roadmap Project, Ralph Bennett (INEL), Hussein Khalil (ANL), Rob Versluis (DOE, Germantown), John Kotek (ANL–Idaho), John Ryskamp (INEEL), Gian-Luigi Fiorini (CEA, CEN/DDIN–France)

11:00 a.m.
Generation IV Roadmap: Fuel Cycles, Charles W. Forsberg (ORNL), David Wade (ANL)

Nonpower Reactors, sponsored by OPD; cosponsored by MJD. Session Organizer: Buzz Savage (JUPITER Corp). Chair: Robert Versluis (DOE, Germantown)

N-5
10:00 a.m.
Technology Goals for Generation IV Nuclear Energy Systems, Sol Levy (Levy Assoc), Neil Todreas (MIT), Ralph Bennett (INEEL), William Magwood IV (DOE)

10:30 a.m.
The Generation IV Technology Roadmap Project, Ralph Bennett (INEL), Hussein Khalil (ANL), Rob Versluis (DOE, Germantown), John Kotek (ANL–Idaho), John Ryskamp (INEEL), Gian-Luigi Fiorini (CEA, CEN/DDIN–France)

11:00 a.m.
Generation IV Roadmap: Fuel Cycles, Charles W. Forsberg (ORNL), David Wade (ANL)

*Nonpower Reactors, sponsored by OPD; cosponsored by IRD, RPD. Session Organizer: David Sean O’Kelly (Univ of Texas, Austin). Chair: David Sean O’Kelly
10:00 a.m.
Quality Assurance Success and Failure at a Nonpower Reactor, David Sean O'Kelly (Univ of Texas, Austin)

10:30 a.m.
Advanced Fm Management Code System for the Pennsylvania State University Breazeale Reactor (PSBR), N. Kriangchaphorn, K. N. Ivanov, C. F. Sears, G. M. Morlang, B. J. Heidrich (Penn State)

11:00 a.m.
Monte Carlo Evaluation of a New Reflector for the UT TRIGA Reactor, Daniel J. Dorsey William S. Charlton (Univ of Texas, Austin), invited


N-6
10:00 a.m.
The Use of STAR-CD to Assess Thermal Fluid Mixing in a PWR Geometry, B. Haugh, J. N. Reyes, Jr. (Oregon State Univ)

10:30 a.m.
Steam Explosion Premixing Phase Simulation Using an Original Combined Multiphase Model, Matjaz Leskovar, Borut Mavko (Jozef Stefan Inst–Slovenia)

11:00 a.m.
An Assessment of Commercial CFD Software for Simulation of Natural Convection, W. D. Pointer, T. Sofu (ANL)

Environmental Impacts of the Fires at Hanford and Idaho U.S. Department of Energy Sites, sponsored by ESD; cosponsored by NISD. Session Organizer: Walt Nicaise (PNNL). Chair: Walt Nicaise

N-7
10:00 a.m.
Idaho National Engineering and Environmental Laboratory Response and Radiological Impacts to Wild Land Fires, George Clarke (BWXT)

10:20 a.m.
Environmental Monitoring Results of Plutonium-239,240 Associated with the Hanford Wildfire, Ted M. Poston, Brett L. Tiller (PNNL)

10:40 a.m.
A Program to Control Biological-Related Radioactive Contamination Spread, A. R. Johnson, G. D. Perkins (Fluor Hanford), J. B. Hall (DOE, Richland)

11:00 a.m.
Evaluation of Air Particulate Sample Analytical Data Related to the 2000 Hanford Range Fire, G. L. Troyer, A. K. D as Gupta, S. L. Fitzgerald (Fluor Hanford)

American Nuclear Society Joint Benchmark Effort, sponsored by RPSD; cosponsored by MCD, RPD. Session Organizer: Hamilton Hunter (ORNL). Chair: Hamilton Hunter

N-8
10:00 a.m.
Joint Benchmark Effort at ANS, H. T. Hunter (ORNL), Russell Mosteller (LANL), Enrico Sartori (NEA DB), Richard Sanchez (CEA–France)

10:30 a.m.
Bonner Balls Benchmark Computations, G. Tracz (Inst Nuc Phys–Poland), H. T. Hunter (ORNL), invited

11:00 a.m.
Assessment of RELAP5/MOD3.2 Against the Peach Bottom Turbine Trip Benchmark Exercise, Claudio Defino (Univ of Genoa–Italy), Francesco D'Auria (Univ of Pisa–Italy), Anthony J. Baratta (Penn State)


N-9
10:00 a.m.
Panelists:
- Bill Leonard (California Assembly)
- Dan Fessler (CPUC)
- Dave Modeen (NEI)
- Linden Blue (General Atomic)
- An environmental community representative (to be determined)

Innovations in Nuclear Engineering Education, Training, and Distance Learning, sponsored by ETD. Session Organizer: Brian Hajek (Ohio State). Chair: Brian Hajek

N-10
10:00 a.m.
Distance Education Programs in Nuclear Engineering at The University of Tennessee, P. G. Groer, J. W. Hines, R. H. Jackson, L. F. Miller, R. E. Pevey, L. W. Townsend, B. R. Upadhyaya, H. L. Dodds (Univ of Tennessee)

10:20 a.m.
Introductory Course in Nuclear and Radiation Engineering/Physics, Sheldon Landsberger, Kathy Schmidt, Farhan Tariq, Salmon Siddiqui (Univ of Texas, Austin)

10:40 a.m.
Popularizing a Nuclear Engineering Course for the Masses, Brian Hajek (Ohio State), invited

FENOC's CBT and Performance Support System Used for 10 CFR 50.59, Larry A. Grime (Grime Assoc), Theodore Hilston (FENOC), Fred Plata (Grime Assoc)

Radioanalytical Methods for Industrial Applications—I, sponsored by IRD; cosponsored by BM D, RPSD. Session Organizer: Rolf Zeisler (NIST). All invited. Chair: Rolf Zeisler

N-11
10:00 a.m.
Activation and Radiation Techniques Developed for Reference Measurements, Wolf Goerner, Achim Berger, Heinrich Riesemeier (BAM–Germany)

10:30 a.m.
Standardization and Quality Control in Fast Neutron Activation Analysis Industrial Applications, W. D. James (Texas A&M)

11:00 a.m.
An Automatic Fast Transfer System at the Research Reactor Munich, Richard Henkelmann, Xiaosong Li (TUM–Germany)

Reactor Physics: General—I, sponsored by RPD. Chair: Kostadin N. Ivanov (Penn State)

McKinley

2001 ANS WINTER MEETING: "NUCLEAR RESEARCH AND DEVELOPMENT"
TUESDAY, NOVEMBER 13 • 1:00-3:00 P.M.

General Chair's Special Session: Passing on Fifty Years of Fast Reactor Knowledge to a New Generation in Nuclear Research and Development—Panel, Session Organizers Leon Walters (ANL), Alexander Stanculescu (IAEA–Austria). All invited. Chairs Leon Walters, Alexander Stanculescu

N-1

1:00 p.m.

There is promise that recovery of the nuclear enterprise is happening after the precipitous decline of the last decade. Unfortunately, at the same time, a significant number of engineers and scientists have retired from the workforce, and a great deal of undocumented knowledge has left with them. These people were not replaced due to lack of funds. At the same time, enrollment in nuclear-related university programs declined. Without the transfer of knowledge from one generation to another through continuity in the workforce, a concerted effort must be made to preserve this knowledge through effective archiving methods. A panel of experts will be assembled to discuss what knowledge must be preserved, how it should be archived for the next generation, and how such an endeavor could be achieved. There will be a question-and-answer session after the last presentation.

Panelists:
- Roland Boehme (FzK–Germany)
- William A. Bookless (LLNL)
- Philippe Fougeras (CEA, DER/SPEX/LPE, Centre d’Etude Cadarache–France)
- Janos Gado (IRPhE, OECD/NEA, Nuclear Science Committee, Hungarian Academy of Sciences)
- John Graham (ETC Cetera Assessments)
- Ron King (ANL)
- Charles M organ (DOE)
- Debbie Cutler (DOE)
- Roland Soule (CEA, DER/SPEX/LPE, Centre d’Etude Cadarache–France)
- Alexander Stanculescu (IAEA–Austria)
- Anatoli Tsiboulja (SSC IPPE)
- Toshio Wakabayushi (JNC–Japan)
- Leon Walters (ANL)
- Robert Workman (BNFL)

TUESDAY, NOVEMBER 13 • 1:00 P.M.

Lead-Cooled Reactors: The Encapsulated Nuclear Heat Source, sponsored by OPD; cosponsored by MSTD. Session Organizer: Jacopo Buongiorno (IN EEL). Chair: Jacopo Buongiorno

1:00 p.m.

The Encapsulated Nuclear Heat Source Reactor Concept, E. Greenspan, A. Barak, (Univ of California, Berkeley), N. W. Brown (LLNL), M. D. Carelli, L. Conway, M. Dzodzo (Westinghouse STC), E. Feldman (ANL), Q. Hossain (LLNL), D. Saphier (Univ of California, Berkeley), J. J. Sienicki, T. Sofu, D. C. Wade (ANL)

1:20 p.m.

The Encapsulated Nuclear Heat Source Potential for Meeting Generation IV Goals, E. Greenspan, A. Barak, (Univ of California, Berkeley), N. W. Brown (LLNL), M. D. Carelli, L. Conway, M. Dzodzo (Westinghouse STC), E. Feldman (ANL), Q. Hossain (LLNL), D. Saphier (Univ of California, Berkeley), J. J. Sienicki, T. Sofu, D. C. Wade (ANL)

1:40 p.m.

Feasibility of Natural Circulation Heat Transport in the ENHS, J. J. Sienicki (ANL)

2:00 p.m.

Encapsulated Nuclear Heat Source Compact Modular Steam Generators, L. Conway (Westinghouse STC), D. Saphier (Univ of California, Berkeley), M. Dzodzo (Westinghouse STC)

2:20 p.m.

ENHS Reactor Energy-Conversion Efficiency and Steam Generators Size, A. Barak, E. Greenspan (Univ of California, Berkeley)

2:40 p.m.

An Inherently Safe Modular LMR Plant: The Encapsulated Nuclear Heat Source, D. Saphier (Univ of California, Berkeley), D. C. Wade (ANL), N. W. Brown (LLNL), L. Conway, M. Dzodzo (Westinghouse STC), E. Greenspan (Univ of California, Berkeley)

3:00 p.m.

Nested Channel Intermediate Heat Exchanger Design Concept for the Encapsulated Nuclear Heat Source, M. Dzodzo (Westinghouse STC), E. Greenspan (Univ of California, Berkeley), L. Conway (Westinghouse STC)

3:20 p.m.

Feasibility of Melting the Lead or Lead-Bismuth in Which the ENHS Core Is Embedded, Earl Feldman, Tanju Sofu (ANL)

Technical Sessions By Day: TUESDAY (Morning & Afternoon)
3:00 p.m. Proliferation Resistance of Advanced Sustainable Nuclear Fuel Cycles, H. E. Garcia, M. J. Lineberry, S. E. Auméaré, H. F. McFarlane (ANL–Idaho), invited

*Generation IV Roadmap—II, sponsored by OPD; cosponsored by MSTD, NISD, RPD. Session Organizer: Buzz Savage (JUPITER Corp). Chair: Robert Versluis (DOE, Germantown)

N-4 1:00 p.m. Development of an Evaluation Methodology to Support the Generation IV Nuclear Energy Systems Technology Roadmap, William Rasin (Rasin Consult), Jordi Roglans-Ribas (ANL)

1:30 p.m. Generation IV Water-Cooled Reactor Concepts, Philip E. MacDonald (INEEL), Kenneth R. Hedges (AECL, Ontario–Canada), John C. (Jack) Devine (Polestar)

2:00 p.m. Generation IV Gas Cooled Reactor Concepts, Finis Southworth (INEEL), Franck Carre (CEA, Saclay–France), Philip Hildebrandt (EM&T)

2:30 p.m. Report on Generation IV Technical Working Group 3: Liquid Metal Reactors, S. L. Rosen (Rosen Consult), Y. Sagayama (JNC–Japan), M. J. Lineberry (ANL), invited

3:00 p.m. A Summary of Generation IV Non-Classical Power Reactor Concepts, Samim Anghaie (Univ of Florida), David Lewis (ANL)

3:30 p.m. Near-Term Deployment of New Nuclear Plants in the United States, Tom Miller (DOE, Germantown), Lou Long (Southern Co), Tony McConnell (Duke Eng), Ray Reith (INEEL)

Reactor Safety: General, sponsored by NISD; cosponsored by OPD. Session Organizer: Chip Martin (DNFSB). Chair: Said Abdulkhalik (Georgia Tech)

N-5 1:00 p.m. Uncertainty Evaluation of Reactor Safety Parameters During SB LOCA, Andrej Prosek (Jožef Stefan Inst–Slovenia)

1:25 p.m. Development and Validation of EO Ps for Kozloduy NPP (Bulgaria), Emilian Popov (Energoproekt-Sofia–Bulgaria), Kent Faris (PNNL), Ron Beelman (DS&S, Reston)

1:50 p.m. Simulation of CP-1300 with Passive ESFs Using M AAP4, Chang W. Huh (KINS–Korea), Kune Y. Suh, Chang H. Chung (Seoul Natl Univ–Korea)

2:15 p.m. Conservative Decision Making: A Part of the Nuclear Safety Culture, William R. Corcoran (NRC)

2:40 p.m. Experimental Investigations on RPV Penetration Integrity Under External Vessel Cooling, Kyoung-Ho Kang, Rae-Joon Park, Ki-Young Lee (KAERI–Korea)

3:05 p.m. Effect of the Annulus Coolant on the RPV Penetration Integrity, Kyoung-Ho Kang, Sang-Baik Kim, Jong-Kyun Park (KAERI–Korea)

3:30 p.m. Managing Complex Self-Organizing Change Joint Construction of the Nuclear Reactor Oversight Process, Mary A. S. Ferdig (Ferdig)


N-6 1:00 p.m. Thermal Design of a Lead-Bismuth Cooled Fast Reactor with In-Vessel Direct-Contact Steam Generation, J. Buongiorno (INEEL), N. E. Todreas, M. S. Kazimi (MIT), invited, Mark Mills Award Winner

1:25 p.m. A Comparative Analysis of APEX-CE and STAR-CD of Fluid Mixing in the Cold Leg and Downcomer of a PWR, E. P. Young, J. N. Reyes, (Oregon State Univ)

1:50 p.m. CFD Modeling of Subcooled Flow Boiling at Atmospheric Pressure, Bošjan Končar, Borut Mavko (Jožef Stefan Inst–Slovenia)

2:15 p.m. Analysis of QUENCH-01 Test with SAMPSON Code, Nobuhide Satoh, Takashi Ikeda, Masaoroh Naitoh (NUPEC–Japan), Katsuhiko Nakahara (Toshiba NEL–Japan), Kazuyuki Katsuragi (MHI Takasago–Japan)

2:40 p.m. Large Eddy Simulation of Flow in LWR Fuel Bundles, Constantine Tzanos (ANL)

3:05 p.m. Flow Around a Rectangular Cylinder Using LES, Donald M. Helton, Yassin A. Hassan (Texas A&M)

3:30 p.m. 3-D Simulation of Rotary Atomized Nozzle with Micro-Expanded Tangent Channel at Low Pressure, Jingyu Ran, Li Zhang, Mingdao Xin, Liangming Pan, Chengbo Wu (Chongqing Univ–China)

Thermal-Hydraulic Division awards presentation and lecture.

*Technological, Safety, and Environmental Aspects of Hydrogen Production and Use–Panel, sponsored by ESD; cosponsored by NISD. Session Organizer: Jan B. van Erp (van Erp Consult), Joseph Green (SWEC). All invited. Chair: David Wade (ANL)

N-7 1:00 p.m.

Panelists:
- David Wade (ANL)
- Masao Hori (Nuclear Systems Association–Japan)
- Anna Falanga (CEA INPS–France)
- Masanori Tashimo (ARTEC–Japan)
- Xavier Vitart (CEA, Saclay–France)
- Michele A. Lewis (ANL)

Data, Analysis, and Operations for Nuclear Criticality Safety, sponsored by NCSD; cosponsored by HFD, NISD, RPD. Session Organizer: Mark DeHart (ORNL). Chair: Kevin Reynolds (DOE, Y-12)

N-8 1:00 p.m. Benchmark Calculations for the Diluted Highly Enriched Uranium
(HEU) and Aluminum Experiment, David Loaiza, Rene Sanchez (LANL)
1:30 p.m.
Critical Masses of Highly Enriched Uranium Diluted with Gd and Polyethylene, Rene Sanchez, David Loaiza (LANL), John Bennion (Idaho State Univ)

2:00 p.m.
Comparison of Absorber Materials for a Palletized Rack Storage System, A. W. Krass, K. D. Lewis (BWXT), J. J. Lichtenwalter, D. A. Tollefson (Navarro Rsch & Eng)

2:30 p.m.
Palletized Rack Storage System Absorber Material Testing, J. J. Lichtenwalter, D. A. Tollefson (Navarro Rsch & Eng), L. E. Johnsen, A. W. Krass, K. D. Lewis (BWXT)

3:00 p.m.
Comparison of Sensitivity Analysis Techniques in Monte Carlo Codes for Multi-Region Criticality Calculations, Bradley T. Read, Douglas E. Peplow (ORNL)

3:30 p.m.
Effects of Concrete Reflector Composition in Nuclear Criticality Safety Calculations of LEU Systems, M. W. Waddell, Jr., W. D. Baltimore (USEC, Paducah)

*Decommissioning and Decontamination Science and Technology: Robotics and Characterization—Papers/Panel, sponsored by DDRD. Session Organizer: James Rang (JS Rang Svc). Chair: Joseph Carignan (Entergy TLG)

N-9
1:00 p.m.
Recent Experiences with the Surface Contamination Monitor/Survey Information Management System (SCM/SMS), Richard Dubiel (Millennium Svc), Joseph Shonka (Shonka)

1:25 p.m.
Misapplication of the Scan MDC, J. J. Shonka, R. E. Burns, R. E. Burmeister, D. M. Debord, M. R. Martial (Shonka)

1:50 p.m.
Robotic Deployment of a Russian Gamma Locating Device at the INEEL, Neal A. Yancey, Vince E. Daniel (INEEL), invited

Panel Discussion
Invited Panelists:
- Paul Wojtaszek (Canberra, Arvada)
- Julia Tripp (INEEL)
- William Hamel (Univ of Tennessee)
- Ahluwalia Rashpal (West Virginia Univ)

Training, Human Performance, and Workforce Development, sponsored by ETD; cosponsored by HFD. Session Organizer: Joseph Kowalski (Silver Fox). Chair: Joe Kowalski

N-10
1:00 p.m.
Promoting Safety and Economic Operation Through Succession and Workforce Management, Christine Fahnstock (Fahnstock Assoc), invited

1:30 p.m.
Meeting Nuclear Plant Staffing Challenges, Harry E. Fetterman (PP&L, Berwick)
Advances in ANL Reactor Physics Methods Inspired by A. F. Henry, H. S. Khalil, T. A. Taiwo (ANL), W. S. Yang (Chosun Univ-Korea), P. J. Finck (ANL)

Advanced Nodal Methods and Applications to LWR Core Design and Analysis in Japan, Toshikazu Takeda, Takumi Horiuchi (Osaka Univ-Japan), Tsutaya Iwamoto (JNF-FC-Japan), Masaki Mori (NFI-Japan)

An Improved Coarse Mesh Transport Method for Criticality Calculations, Dan Ilias, Farzad Rahnema (GeorgiaTech)

The Unified Nodal Method for Numerical Solution to Two-Group Diffusion Equations, Hyun Chul Lee, Ku Young Chung, Chang Hye Kim (Seoul Natl Univ-Korea)


**WEDNESDAY, NOVEMBER 14 • 8:00 A.M.**

**ANS President’s Special Session: Hydrogen Systems: An Overview—Panel, Session Organizer: David Scott (Univ of Victoria-Canada/IAHE). All invited. Chair: David Scott**

Tahoe

8:00 a.m.

Because the importance of nuclear-derived hydrogen to the future of our industry could be so significant, this year the President's Special Session will focus on hydrogen systems. Eminent speakers for the President’s Special Session will present a wide range of hydrogen application and experience. Discussions will explore the opportunities for nuclear power in the production of hydrogen for fuel cell applications, hydrogen for cleaner fossil fuel harvesting, and hydrogen safety with a look at the Hindenburg mystery.

**INTRODUCTIONS:**

- Gail Marcus, President, American Nuclear Society
- David Scott, Founding Director, Institute for Integrated Energy Systems (Univ of Victoria-Canada/IAHE)

**SPEAKERS:**

- Building Sustainable Energy Systems: The Role of Nuclear-Derived Hydrogen, Hans-Holger Rogner (IAEA-Austria/Intergovernmental Panel on Climate Change)
- The Role of Fuel Cells and Imagining Future Hydrogen Systems, Geed M. Clean (Univ of Victoria-Canada)
- Nuclear-Electrolysis Synergies: For Next Hydrogen Production and Clean(er) Fossil Reserves Harvesting, Alexander Stuart (Electrolyser Corp-Canada)
- The Hindenburg Mystery Resolved and Matters of Hydrogen Safety, Addison Bain (formerly NASA)

**MATERIALS COMPATIBILITY IN LIQUID-METAL COOLANTS—1, sponsored by MSTD; cosponsored by AAD. Session Organizer: Todd Allen (ANL-Idaho). Chair: Todd Allen**

**N-2**

10:00 a.m.

Present Status of Study on Compatibility of Steels in LBE, Kazumi Aoto, Tomohiro Furukawa (JNC-Japan)

10:20 a.m.

A Test System for Experimental Studies of Liquid-Metal-Structural-Material Interaction, J. Lim, P. W. Stahle, R. G. Ballinger (MIT)

10:40 a.m.

Heavy Metal Coolant Corrosion Testing Using a Gas Lift Apparatus, Eric P. Loewen, Philip E. M. MacDonald (INEL)

11:00 a.m.

Corrosion of Zirconium, 316 and 410 Stainless Steel, F-22, and HT-9 Exposed to High Temperature Heavy Metal Coolant Under Extreme Conditions, Eric P. Loewen, Philip E. M. MacDonald (INEL)

2:00 p.m.

Advances in ANL Reactor Physics Methods Inspired by A. F. Henry, H. S. Khalil, T. A. Taiwo (ANL), W. S. Yang (Chosun Univ-Korea), P. J. Finck (ANL)

2:20 p.m.

Advanced Nodal Methods and Applications to LWR Core Design and Analysis in Japan, Toshikazu Takeda, Takumi Horiuchi (Osaka Univ-Japan), Tsutaya Iwamoto (JNF-FC-Japan), Masaki Mori (NFI-Japan)

2:40 p.m.

An Improved Coarse Mesh Transport Method for Criticality Calculations, Dan Ilias, Farzad Rahnema (GeorgiaTech)

3:00 p.m.

The Unified Nodal Method for Numerical Solution to Two-Group Diffusion Equations, Hyun Chul Lee, Ku Young Chung, Chang Hye Kim (Seoul Natl Univ-Korea)

3:20 p.m.


**WEDNESDAY, NOVEMBER 14 • 10:00 A.M.**


**N-1**

10:00 a.m.

This panel highlights the key technical innovations, lessons learned, and major themes identified from the June 2001 Embedded Topical Energy Facility Contractors Group Safety Analysis Workshop (June 18-21, 2001, Milwaukee). The workshop was the 11th annual technical conference in a series promoting consistent and standardized safety analysis tailored to the hazard level posed by DOE facilities. Safe operation and utilization of existing facilities; new missions; consolidation of strategic infrastructure; and dispositioning of older, nonviable facilities within the DOE Complex are the recurring themes of the workshop. Additionally, this year’s meeting discussed new facilities and operational hazards of “non-standard” facilities such as accelerators and mixed-oxide fuel fabrication installations.

The meeting provided a forum for safety analysts and sharing of lessons learned, operational insights, and achievable solutions to Complex-wide issues. Implementation of 10 CFR 830 Nuclear Safety Management Rule, accident phenomenology and computer modeling, natural phenomena hazards, integrated safety management process implementation, decontamination and decommissioning, updating the authorization basis, and other key topics were covered. Specific subjects covered in panels and technical papers were as follows:

1. DOE and contractor perspectives on implementation of the Nuclear Safety Management Rule
2. Experience implementing integrated safety management processes
3. Transportation of fissile and nuclear waste—interstate issues
4. Computer code improvements and software quality assurance issues
5. Implementing integrated systems for hazard and risk analyses and achieving “real” safety improvements
6. Statistical methods in accident analysis
7. Consequence determination and building wake effects

A panel of selected representatives from Department of Energy headquarters, field offices, contractors, independent oversight, and safety analysis consultants will discuss the major methodology, regulatory, and technical areas that dominated the workshop.

**Panelists to be determined.**
Technical Sessions By Day: WEDNESDAY (Morning)

Official Program

N-4
10:00 a.m.
**Panelists:**
- Hubertus Nickel (FzJ–Germany)
- Walter Simon (General Atomics)
- David Nicholls (ESKOM – South Africa)
- James M. Kendall (IAEA–Austria)

General Two-Phase Flow—I, sponsored by TH D. Session Organizer: R. P. Martin (Siemens). Chairs: José Reyes, Jr. (Oregon State Univ), Constantine Tzanos (ANL)

N-6
10:00 a.m.
Void Fraction Evolution Along Subcooled Boiling Flow in Vertical Annulus, Ivo Kljenak (Jozef Stefan Inst–Slovenia)

10:20 a.m.
Void Fraction Distribution of Subcooled Bubbly Flows Along Adiabatic Channel, H. Tang, Q. Wu, J. N. Reyes (Oregon State Univ), R. Yang (Tsinghua Univ–China)

10:40 a.m.
New Model for Predicting Liquid Entrainment Onset, K. Welter, Q. Wu, J. Reyes, Jr. (Oregon State Univ)

11:00 a.m.
HPSI Fluid Mixing in a Transparent Cold Leg, Christopher Linrud, Ian Davis, John Groome, José N. Reyes, Jr. (Oregon State Univ)

*Current Issues in Computational Methods—Roundtable, sponsored by MCD. Session Organizer: Alireza Haghighat (Univ of Florida). All invited. Chair: Alireza Haghighat*

N-7
10:00 a.m.
**Panelists:**
- Boundary Condition Treatment for Numerical Transport, Richard Sanchez (CEA, Saclay–France)
- OTHER PANELISTS TO BE DETERMINED.

Recent Developments in Emergency Preparedness and Response, sponsored by ESD; cosponsored by NISD. Session Organizer: Carl Mazzola (SWEC, Evans). Chair: James Hardeman (GA DNR/EPD)

N-8
10:00 a.m.
Emergency Preparedness: A Tool Providing Source Terms for Dispersion Codes, Gert Sdouz (Austrian Rsch Ctr Seibersdorf–Austria)

10:30 a.m.
Generation and Utilization of Simulated Gamma Spectra to Evaluate the Performance of Gamma Spectral Analysis Systems for Emergency Conditions, Clifford P. Blackman, Jr. (Georgia DNR)

11:00 a.m.
Emergency Planning Measures to Support 10CFR50.54(t), Ernestine M. Kuhr (Duke Energy)

Calculations of Decay Heat and Radionuclide Inventories, sponsored by RPD; cosponsored by IRD, NCSD, RPSD. Session Organizer: David Carpenter (Bechtel Bettis). Chair: David Carpenter

10:00 a.m.
FP Decay Heat Calculation Using JENDL FP Decay Data File, J. Katakura (JAERI CNS–Japan)

10:30 a.m.
Decay Heat Code Validation Activities at ORNL: Supporting Expansion of NRC Regulatory Guide 3.54, I. C. Gauld (ORNL)

11:00 a.m.
The Relative Significance of Actinide Decay Heat for Nuclear Fuel Characterization, Herschel P. Smith (Duke Power)


N-10
10:00 a.m.
**Panelists:**
- Charles Peterson (Shaw Pittman)
- H arold Ray (SCF)
- Rod Adams (Energy Insights)
- A. Scott MacAinsh (PricewaterhouseCoopers)
- John Polcyn (Bechtel)

Biology and Medicine: General, sponsored by BM D; cosponsored by IRD, NISD, OPD, RPSD. Session Organizer: David Anderson (Electric Boat Corp). Chair: Donald Becker (N IST, ret.)

N-11
10:00 a.m.
"Inverse" Dose Rate Effect: Fit to a Dose Rate Induced Radioresistance Model and Correlation with Adaptive Response and Dose Induced Radioresistance Data, Bobby E. Leonard (Int Acad Hi-Tech Svc)

10:30 a.m.
Negative Dose Response to Low Level Ionizing Radiation: A Quasi-Threshold from Initiation of Radioresistance Mechanisms for Both Spontaneous and Radiation Damage, Bobby E. Leonard (Int Acad Hi-Tech Svc)

11:00 a.m.
Design of a 252Cf-Based Cell Irradiator for Measuring Compound-RBEs for Neutron Capture Therapy, C.-K. Chris Wang, Casey Moore (Georgia Tech), David Halpern (Isotron)

Reactors Physics: General—II, sponsored by RPD. Chair: William Charleston (Univ of Texas, Austin)

McKinley
10:00 a.m.
Burnup Reactivity and Isotopics of an HTGR Fuel Pebble, J. R. Johnson, J. R. Lebenhaft, M. J. Driscoll (MIT)

10:20 a.m.
Core Performance of a Whole Assembly Th/U Seed-Blanket Fuel Cycle, D. Wang, M. J. Driscoll, E. E. Pilat, M. S. Kazimi (MIT)

10:40 a.m.
OECD/NRC BWR TT Benchmark: A Core Boundary Condition Model Approach, J. Solís, K. N. Ivanov, M. Vela Garcia (Penn State), Andy M. Olson (Exelon)

11:00 a.m.
Calculational Methods for Evaluating the Neutronics Performance of Enriched Burnable Poisons in PWRs, J-P. A. Renier, M. L. Grossbeck (ORNL)
Early Site Permits: First Step to the Next Generation—Panel, sponsored by O P D. Session Organizer: Kyle Turner (McCallum-Turner). All invited. Chair: Kyle Turner

N-3 10:00 a.m. 
Panelists:
• Kyle Turner (McCallum-Turner) 
• Ed Rumble (EPRI) 
• Edward M. Quinn (MDM Eng) 
• DOE representative (to be determined) 
• Utility representative (to be determined) 

Wednesday, November 14 • 1:00 P.M. 

Probabilistic Safety Assessment, sponsored by NISD; cosponsored by HFD, O P D. Chair: Anthony Baratta (Penn State) 

N-1 1:00 p.m. 
The role of 10CFR 50.65(A)(4) in the Nuclear Plant Modification Process, Raymond H. V. Gallucci (RG & E, Ginna) 
1:30 p.m. 
Development of a Probabilistic Model for Passive System Reliability Quantification, Luciano Burgazzi (ENEA, Bologna-Italy) 
2:00 p.m. 
Dynamic Fault Tree as an Extension of Standard Fault Tree, M. Cepin (Joòef Stefan Inst-Slovenia) 
2:30 p.m. 
Risk-Informed Evaluation of Allowed Outage Times, M. Cepin (Joòef Stefan Inst-Slovenia), S. M artorell (Polytechnic Univ of Valencia-Spain) 
3:00 p.m. 
Unreliability Quantification of a Containment Cooling System Through ACE and ANN Algorithms, Zhenhua Cui, John J. Vandenkieboom (LANL), Robert W. Youngblood (ISL) 


N-2 1:00 p.m. 
Corrosion of Stainless Steels by Lead-Based Reactor Coolants, L. Lebowitz, V. A. Maroni, S. M. McDevitt, A. G. Raraz, A. J. Kropf (ANL) 
1:30 p.m. 
Study of Lead-Bismuth Technology at JAERI, Toshinobu Sasa, Shigeru Saito, Kenji Kikuchi, Yuji Kurata, Masatoshi Futakawa (JAERI CNS-Japan) 
2:00 p.m. 
Corrosion of Steels in a Flowing Nonisothermal Pb-Bi, M inoru Takahashi, Tadashi Suzuki, Hiroshi Sekimoto (Tokyo Inst Technol- Japan) 
2:30 p.m. 
Compatibility Evaluation of Fuel Cladding Materials for LMFBR in Sodium, Eiichi Yoshida, Yasushi Hirakawa (JNC-Japan) 
3:00 p.m. 
Effects of Oxygen Potential on Corrosion of Steel in Sodium, K. Aoto, E. Yoshida, Y. Tadokoro (JNC-Japan) 
3:30 p.m. 
The Effect of Tungsten on Microstructural Changes During Creep of 10Cr-Mo Steel, Sung Ho Kim, B. J. Song, Woo Seog Ryu (KAERI, Taejon-Korea) 


N-3 1:00 p.m. 
Panelists:
• The Public Information Cycle, Emmy Roos (Washington Grp Inst) 
• A Waste Generator and Minimizer, Eric Goldin (SCE, San Onofre) 
• Nuclear-Medicine Waste Generation and Issues for Disposal in California, Robert Lull (Univ of California, San Francisco/Fellow American College of Nuclear Physicians) 
• Potential High-Level-Waste Repository, Ken Hess (Yucca Mtn Proj) 
• The Problem of Transporting Waste Through the Public Domain, Dennis Hurt (DOE, Carlsbad) 
• Consequences of Lack of Disposal in all Aspects of the Beneficial Uses of Nuclear Science and Technology, Alan Pasternak (Cal Rad Forum) 

Pebble Bed Modular Reactor, sponsored by O P D; cosponsored by HFD, RPD. Session Organizer: Mark Reinhart (NRC). All invited. Chair: Mark Reinhart 

N-4 1:00–2:30 p.m. 
Panelists:
• H ubertus Nickel (Fzj-Germany) 
• Walter Simon (General Atomics) 
• David Nicholls (ESKOM-M-South Africa) 
• James M. Kendall (IAEA-Austria) 

3:00 p.m. 
Modularity in Design of the MIT Pebble Bed Reactor, Marc V. Berte, Andrew C. Kadak (MIT) 
3:25 p.m. 
AN Integrated Fuel Performance Model for the Modular Pebble Bed Reactor, Jing Wang, Ronald Ballinger (MIT) 
3:50 p.m. 
A Fracture Mechanics Based Failure Model for TRISO Fuel Particles, Jing Wang, Ronald Ballinger (MIT) 
4:15 p.m. 
4:40 p.m. 

5:30 p.m.
A Pebble Bed HTGR Transmutation Option, D. Sapahi (Sorteq NRC-Israel), P. T. León, J. M. Martínez-Val (UPM—Spain)

NOTE: This session will immediately follow the preceding session, which begins at 1:00 p.m. in the same room.

Research, Development, and Emerging Techniques for Power Reactors, sponsored by OPD; cosponsored by DDRD, HFD.
Session Organizer: Jon Stouky (Mega-Tech Svc). Chair: Jon Stouky

N-5
1:00 p.m.

1:20 p.m.
Nanocrystalline Electrosleeve Repair of Callaway Steam Generator Tubes, Timothy E. Hermann (AmerenUE—Callaway), James E. Galford, Don Stewart, Mi hai G. Pop (Framatome, Lynchburg)

1:40 p.m.
Development of a Method for Quantifying the Reliability of Nuclear Safety-Related Software, Yi Zhang, Michael W. Golay (MIT)

2:00 p.m.
Development of a Safety Analysis Method for Requirements Based on Statechart Using Combined SCR and ISO Tables, Jung Hwan Lee, Poong Hyun Seong (KAIST—Korea)

2:20 p.m.
Development of Digital Online Active Test Plant Protection System (DOAT-PPS) for PWR, Seo Ryong Koo, Poong Hyun Seong (KAIST—Korea), H an Seong Son (KAERI—Korea)

2:40 p.m.
A Study for Soft-Landing from Paper Procedure to Digital Procedure, Kidoo Kang, Brian K. Häjek (Ohio State), Shoab Usman, John M. Christenson (Univ of Cincinnati)

3:00 p.m.

General Two-Phase Flow—II, sponsored by THD. Session Organizer: R. P. Martin (Siemens). Chairs José Reyes, Jr. (Oregon State Univ), Constantine Tzanos (AN L)

N-6
1:00 p.m.

1:30 p.m.
Summary of MSLB Tests OSU-CE-0011 and OSU-CE-0012, K. C. Abdel, E. P. Young, J. N. Reyes, Jr. (Oregon State Univ)

2:00 p.m.
Two-Phase Natural Circulation Experiments in The Penn State Low-Pressure Integral Test Facility, Satish M. Catiner, Lawrence E. Hochrater, Robert M. Edwards, Weidong He, Zhengyu Huang (Penn State)
Technical Sessions By Day:  WEDNESDAY (Afternoon)/THURSDAY(Morning)

Analytical Intercomparison on NIST Renewal Pine Needles SRM
2:20 p.m.
Carlos da Silva, Maria Helena T. Taddei (BNCNE–Brazil), invited

Studies of Radionuclide Transfer in the Agri-Food Production by Nuclear Analytical Methods, Elisabethe A. De Nadai Fernandes (Univ of Sao Paulo, CENA/USP–Brazil), José Flávio Macacini, Nivaldo Carlos da Silva, Maria Helena T. Taddei (BNCNE–Brazil), invited

Actinide Separation Using Pressurized Ion-Extraction Liquid Chromatography, S. P. LaMont, J. R. Cadieux, S. Walter, W. A. Emel (Westinghouse SRC)
2:00 p.m.
Studies of Radionuclide Transfer in the Agri-Food Production by Nuclear Analytical Methods, Elisabethe A. De Nadai Fernandes (Univ of Sao Paulo, CENA/USP–Brazil), José Flávio Macacini, Nivaldo Carlos da Silva, Maria Helena T. Taddei (BNCNE–Brazil), invited

Heavy Metal Leaching from Soil in an Outdoor Firing Range, Sheldon Landsberger, Shamsuzzoha Basunia (Univ of Texas, Austin)
3:20 p.m.

Is Your Core Operating as Designed? Scott T. Robertson (Framatome, Lynchburg), invited
1:40 p.m.
A Vendor's View of Reactor Physics Testing, Louis R. Grobmyer, Michael D. Hebel, D. J. Hill (Westinghouse, Monroeville), invited
2:00 p.m.
Measurement of BWR Reactor Physics Characteristics—II: Comparison Between Calculation and Measurement, Takaaki Kobayashi (Toden Software–Japan), Makoto Nakano (MHI, Kobe–Japan), Takashi Hara (TEPCO–Japan), invited
2:20 p.m.
Measurement of BWR Reactor Physics Characteristics—II: Comparison Between Calculation and Measurement, Takaaki Kobayashi (Toden Software–Japan), Makoto Nakano (MHI, Kobe–Japan), Takashi Hara (TEPCO–Japan), invited
2:40 p.m.

3:00 p.m.


A Practical Approach for Evaluating the Uncertainties of Instrumental Neutron Activation Analysis Measurements, Robert R. Greenberg (NIST), invited
2:40 p.m.

Determination and Correlation of Cs-137 and Unsupported Pb-210 in Soil Erosion Studies, Sheldon Landsberger, Calif Mann (Univ of Texas, Austin), Lewis Hunter (U.S. Army CRREL)
3:00 p.m.

1575a, D. A. Becker (NIST, Guest Researcher), E. A. Mackey (NIST), invited
2:40 p.m.

A Practical Approach for Evaluating the Uncertainties of Instrumental Neutron Activation Analysis Measurements, Robert R. Greenberg (NIST), invited
2:40 p.m.

Determination and Correlation of Cs-137 and Unsupported Pb-210 in Soil Erosion Studies, Sheldon Landsberger, Calif Mann (Univ of Texas, Austin), Lewis Hunter (U.S. Army CRREL)
3:00 p.m.

Heavy Metal Leaching from Soil in an Outdoor Firing Range, Sheldon Landsberger, Shamsuzzoha Basunia (Univ of Texas, Austin)
3:20 p.m.
Developments in Modeling of Radionuclides and Heat Transport, sponsored by FCWMD. Session Organizer: Emory Collins (ORNL). Chair: John Dewes (Westinghouse SRC)

N-3
8:30 a.m.
Modification of Biosphere Model for Assessing Radiological Safety of HLW Disposal in Korea, Hyun Seok Ko, Joo Hyun Moon, Chang Sun Kang (Seoul Nat'l Univ-Korea)

9:00 a.m.
Automatic Software Processing for Inventories of Nuclides (ASPRIN), Luca Gratton, Jorge M. Rammsy, (Bechtel, Las Vegas), Harlan W. Stockman (SNL)

9:30 a.m.
Ventilation Model Sensitivity to Heat Transport in the Emplacement Drift, G. Danko, D. Bahrami (Univ of Nevada, Reno), J. A. Blink (LLNL)

10:00 a.m.

10:30 a.m.
Model and Simulator Development for Integrated Nuclear Fuel Management, Yue Guan (ASTM, Inc.)

11:00 a.m.
Estimating Future Radwaste Volume and the Requirements for a Central Treatment and Storage Facility in Saudi Arabia, Khalid M. Al-Sulaiman (KACST-Saudi Arabia), Samir Abdul-Majid (King Abdulaziz Univ-Saudi Arabia)

Mathematical Modeling: General, sponsored by MCD; cosponsored by RPSD. Chair: Nam Zin Cho (KAIST-Korea)

N-4
8:30 a.m.
Error Modes in Implicit Monte Carlo, William R. Martin (Univ of Michigan), Forrest B. Brown (LANL)

8:55 a.m.
Exponential Weakly Discontinuous Nodal Schemes for the Transport Equation, Edmundo del Valle (IPN-Mexico), Gustavo Alonso (IPN-Mexico/ININ-Mexico)

9:20 a.m.
Pin-Cell Homogenization via Generalized Equivalence Theory and Imbedded Assembly Calculation, Keon Woo Park, Chang Je Park, Kyung Taek Lee, Nam Zin Cho (KAIST-Korea), Yong Hee Kim (KAERI-Korea)

9:45 a.m.
Investigation of Alternative Boundary Conditions in the Analytical Pin Power Reconstruction Method, D. Ziabletsev, K. Ivanov (Penn State)

10:10 a.m.

10:35 a.m.
SeraEGS—A Demonstration Code, C. A. Wemple, D. W. Nigg (INEL)

11:00 a.m.
Application of Recursive-Autoregressive Models for Stability Calculation of Nonstationary Time-Series, Miguel Ceceñas-Falcón (IIE-Mexico)

Control Room Habitability—Panel, sponsored by OPD; cosponsored by HFD, NISD. Session Organizer: John J. Hayes (NRC, Rockville). All invited. Chair: John J. Hayes

N-6
8:30 a.m.


N-7
8:30 a.m.
RIP-50 Option 2 Pilot Program Presentation Description, Tim Reed (NRC)

9:00 a.m.
Risk-Informing Special Treatment Requirements, Doug True (ERIN Eng)

9:30 a.m.

10:00 a.m.
Westinghouse Owners Group Risk-Informed Regulation Option 2, Jason Brown, Kenneth Balkey, Robert Lutz (Westinghouse), D avid Alford, Maurice Dingler (Wolf Creek Nucl), David Buchet (D ominion Gen/Res)

10:30 a.m.
CEOG RIR Option 2 Project, G. W. Sowers (APS, Tonopah), R. E. Jaquith (Westinghouse)

11:00 a.m.
Pursuing Risk-Informing Part 50/Option 2, Stanley H. Levinson (Framatome, Lynchburg)

Radiation-Based Nondestructive Testing Techniques and Applications, sponsored by RPSD; cosponsored by FCWMD, IRD, MCD. Session Organizer: Raymond Klann (ANL). Chair: Raymond Klann

N-8
8:30 a.m.
Wide-Range Plutonium Isotopic Analysis with CdTe Detector, D. T. Vo, P. A. Russo (LANL)
9:00 a.m.  
Performance of a Moderating Neutron Spectrometer That Uses Scintillating Fibers, R. A. Craig, M. Bliss, D. N. Anderson (PNNL)

9:30 a.m.  
Underwater Nondestructive Assay of Irradiated Slugs, Frank S. Moore, Jr., Saleem R. Salaymeh (Westinghouse SRC)

10:00 a.m.  

*Industry Update on Material and Site Clearance Standards–Panel*, sponsored by DDRD. Session Organizer: Jas Devgun (Sargent & Lundy). All invited. Chairs: James Fiore (DOE)

N-9  
8:30 a.m.  
MODERATOR:  
Carl Mazzola (SWEC, Evans)

**PANELISTS:**  
• James Fiore (DOE)  
• Larry Camper (NRC)  
• Thomas Mee (PGE, Rainier)  
• Doug Jamieson (Duratek)

**OTHER PANELISTS TO BE DETERMINED.**

**Artificial Intelligence, Neural Networks, and Data Mining**, sponsored by HFD. Session Organizer: Alenka Brown-VanHoozer (BWXT). Chair: Gail A. Cordes (INEEL)

N-10  
8:30 a.m.  

9:00 a.m.  
Fault Detection and Isolation of Sensors and Actuators in a Nuclear Plant Steam Generator, Belle R. Upadhyaya, Ke Zhao, Baofu Lu (Univ of Tennessee), Michael Doster (NSU)

9:30 a.m.  
A Nonparametric Sequential Rank-Sum Probability Ratio Test Method for Signal Validation, Chenggang Yu, Bingjing Su (Univ of Cincinnati)

10:00 a.m.  
Nuclear Steam Generator Water Mass Control by Neural Networks, W. Dong, J. M. Doster, C. W. Mayo (NSU)

10:30 a.m.  
Bayesian Belief Network-Based Advisory System for Steam Generator Replacement Project Management, Dohyoung Kim, Michael W. Golay (MIT)

**Isotopes and Radiation: General**, sponsored by IRD. Chair: Ned Wogman (PNNL)

N-11  
8:30 a.m.  
Reproducibility Experiments and Optimization of the Neutron and Gamma-Ray Shielding for the UT PGAA System, K. Pandey, D. J. Dorsey, W. S. Charlton, Robert Hebner (Univ of Texas, Austin)
## Official Program

**EMBEDDED TOPICAL MEETING—I: Practical Implementation of Nuclear Criticality Safety**  
November 12-15, 2001 • Reno, Nevada

### Date/Time

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<td>Monday, Nov. 12</td>
<td>10:00-11:30 a.m.</td>
<td>Crystal 1 &amp; 2</td>
<td>Plenary—Implementing Criticality from Then to Now</td>
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<tr>
<td>Monday, Nov. 12</td>
<td>1:00 p.m.</td>
<td>Crystal 1 &amp; 2</td>
<td>Regulatory Guidelines and Rules</td>
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<td>Tuesday, Nov. 13</td>
<td>8:00 a.m.</td>
<td>Crystal 1</td>
<td>Burnup Credit—I</td>
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<td>Tuesday, Nov. 13</td>
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<td>Crystal 2</td>
<td>Validation—I</td>
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<td>Tuesday, Nov. 13</td>
<td>1:00 p.m.</td>
<td>Crystal 1 &amp; 2</td>
<td>MOX</td>
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<td>Wednesday, Nov. 14</td>
<td>8:00 a.m.</td>
<td>Crystal 1</td>
<td>Burnup Credit—II</td>
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<td>Wednesday, Nov. 14</td>
<td>8:00 a.m.</td>
<td>Crystal 2</td>
<td>Double Contingency Principle</td>
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<td>Wednesday, Nov. 14</td>
<td>1:00 p.m.</td>
<td>Crystal 1</td>
<td>D&amp;D</td>
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<td>Wednesday, Nov. 14</td>
<td>1:00 p.m.</td>
<td>Crystal 2</td>
<td>Geological Disposal</td>
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<td>Wednesday, Nov. 14</td>
<td>split session</td>
<td>Crystal 1</td>
<td>Validation—II</td>
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<tr>
<td>Wednesday, Nov. 14</td>
<td>split session</td>
<td>Crystal 2</td>
<td>Holders</td>
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<td>Thursday, Nov. 15</td>
<td>8:00 a.m.</td>
<td>Crystal 1</td>
<td>Burnup Credit—III</td>
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<td>Thursday, Nov. 15</td>
<td>8:00 a.m.</td>
<td>Crystal 2</td>
<td>NCS Programs</td>
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<td>Thursday, Nov. 15</td>
<td>1:00 p.m.</td>
<td>Crystal 1 &amp; 2</td>
<td>Training &amp; Qualification</td>
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### Monday, November 12 • 10:00-11:30 A.M.

**Plenary—Implementing Criticality Safety From Then to Now**, sponsored by NCSD. Chair: Fitz Trumble (WSM S)

- Video Montage from the Pioneers, introduced by Norm Pruvost (CSIRC)
- Evolution of Criticality Safety Requirements, Jerry McKamy (DOE)
- Challenges in Criticality Safety Implementation in Today’s Environment, Christa Reed (BWXT)

### Monday, November 12 • 1:00 P.M.

**Regulatory Guidance and Rules**, sponsored by NCSD. Chair: Harry Felsher (NRC)

- Revision of the DOE Criticality Safety Order, Burton Rothleder (DOE, Germantown)
- 10 CFR Part 70 and Part 76 Standard Review Plans, Harry D. Felsher, Christopher S. Tripp (NRC)
- The DOE Criticality Safety Good Practices Program Guide, Burton Rothleder (DOE, Germantown)
- Specification of Control Features for Nuclear Criticality Safety, R.
Embedded Topical Meeting-1: Nuclear Criticality Safety

TUESDAY, NOVEMBER 13 • 8:00 A.M.

Burnup Credit—I, sponsored by NCSD. Chair: Michaele Brady Raap (PNNL)

Crystal 1
8:00 a.m.

8:30 a.m.
Use Burnup Credit for Criticality Safety for the Hanford Spent Nuclear Fuel Project, S. F. Kessler, K. N. Schwinkendorf, D. G. Erickson, H. Toffer (Fluor Fed Svc)

9:00 a.m.
Design of Wet Storage Racks for Spent BWR Fuel, Kristopher W. Cummings, Stanley E. Turner (Holtec Int)

9:30 a.m.
Impact of Partially Inserted Control Rods on Actinide-Only Burnup Credit Margin, Dale Lancaster (Nuclear Consultants.com), Charles T. Rombough (CTR Tech Svc)

10:00 a.m.
SAS2D—A Two-Dimensional Depletion Sequence for Characterization of Spent Nuclear Fuel, Mark D. DeHart (ORNL)

10:30 a.m.
Development and Applications of a Prototypic SCALE Control Module for Automated Burnup Credit Analysis, I. C. Gauld, C. E. Sanders (ORNL)

Validation—I, sponsored by NCSD. Chair: Valerie Putman (INEEL)

Crystal 2
8:00 a.m.

8:25 a.m.
The Role of ICSBEP in Validation, R. Bartholomay, F. Trumble (WSM S)

8:50 a.m.
A Nuclear Analyst’s View of Good Practices for Computer Code Validation, Burton Rothleder (DOE, Germantown)

9:15 a.m.
Activities for Revising Nuclear Criticality Safety Handbook, Hiroshi Okuno, Yasushi Nomura (JAERI–Japan)

9:40 a.m.
Application of Sensitivity and Uncertainty Analysis Methods to a Validation Study for Weapons-Grade Mixed-Oxide Fuel, M. E. Dunn, B. T. Rearden (ORNL)

10:05 a.m.
Recalculations of Some Plutonium Limits for Future Revisions of ANSI 8.1, Jerry Hicks (Individual), Adolf Garcia (INEEL/DOE)

10:30 a.m.
Integration of Several Elements of the DOE Nuclear Criticality Safety Program, T. E. Valentine, H. Derrien, L. C. Leal, K. H. Guber (ORNL), J. B. Briggs (INEEL), A. Tsibouli (IPPE–Russia)

10:55 a.m.
Practical Application of Validation for UF4 Downblending, Larry L. Wetzel (BWXT), Clinton E. Gross (Paschal Solutions)

TUESDAY, NOVEMBER 13 • 1:00 P.M.

MOX, sponsored by NCSD. Chair: Keyes Niemer (Duke Eng)

Crystal 1 & 2
1:00 p.m.
From UO2 to MOX: Implications for Criticality Safety—and Beyond, Burton Rothleder (DOE, Germantown)

1:30 p.m.
Nuclear Criticality Safety in the Design of the Plutonium Disposition and Conversion Facility, Michaele (Mikey) Brady Raap (PNNL), Marc Rosser (WSM S)

2:00 p.m.
Overview of MOX Fuel Fabrication Facility Nuclear Criticality Safety Design Considerations, K. A. Niemer, R. G. Foster, W. P. Hennessy (Duke Cogema Stone & Webster)

2:30 p.m.
Evaluation of MOX Fuel Storage at McGuire and Catawba, Joe Coletta (Duke Energy)

3:00 p.m.
Validation of SCALE4 and MCNP4 for MOX Heterogeneous Systems of MOX Fuel Fabrication Facilities, Yoshio Shimizu, Ichiro Nojiri, Tsutomu Oka (Japan Nuclear Cycle Development Inst–Japan)

3:30 p.m.
MOX Fuel Fabrication Facility Nuclear Criticality Validation Approach, Sven O. Bader (Duke Eng), Robert G. Foster (Duke Cogema Stone & Webster), Mathias Lein (SGN–France), Keyes A. Niemer (Duke Cogema Stone & Webster)

WEDNESDAY, NOVEMBER 14 • 8:00 A.M.

Burnup Credit—II, sponsored by NCSD. Chair: Mark D. DeHart (ORNL)

Crystal 1
8:00 a.m.
Spent Fuel Criticality Benchmark Experiments, John M. Scaglione (Bechtel SAIC Company)

8:25 a.m.
The Role of ICSBEP in Validation, R. Bartholomay, F. Trumble (WSM S)

8:50 a.m.
A Nuclear Analyst’s View of Good Practices for Computer Code Validation, Burton Rothleder (DOE, Germantown)

9:15 a.m.
Activities for Revising Nuclear Criticality Safety Handbook, Hiroshi Okuno, Yasushi Nomura (JAERI–Japan)

9:40 a.m.
Application of Sensitivity and Uncertainty Analysis Methods to a Validation Study for Weapons-Grade Mixed-Oxide Fuel, M. E. Dunn, B. T. Rearden (ORNL)

10:05 a.m.
Recalculations of Some Plutonium Limits for Future Revisions of ANSI 8.1, Jerry Hicks (Individual), Adolf Garcia (INEEL/DOE)

10:30 a.m.
Integration of Several Elements of the DOE Nuclear Criticality Safety Program, T. E. Valentine, H. Derrien, L. C. Leal, K. H. Guber (ORNL), J. B. Briggs (INEEL), A. Tsibouli (IPPE–Russia)

10:55 a.m.
Practical Application of Validation for UF4 Downblending, Larry L. Wetzel (BWXT), Clinton E. Gross (Paschal Solutions)
9:30 a.m.
Parametric Study of Control Rod Exposure for PWR Burnup Credit
Criticality Safety Analyses, Charlotte E. Sanders, John C. Wagner (ORNL)

10:00 a.m.
Effects of the Presence of Axial Blankets and Integral Burnable
Absorbers on the End Effect of PWR Burnup Profiles, Jens-Christian
Neuber (Framatome-ANP-Germany)

**Double Contingency Principle**, sponsored by NCSD. Chair: Christa Reed (BWXT)

**Crystal 2**
8:00 a.m.
Use of Fixed Neutron Absorbers for HEU in Glass Columns, N. Brown,
R. M. Montgomery (Nucl Fuel Svc), R. M. Maurer (Nucl Safety Assoc)

8:30 a.m.
Risk-Significant Accidents and Measures Taken to Prevent Them for
the 50MT Downblending Facility at BWX Technologies, Brian O.
Kidd (BWXT)

9:00 a.m.
Controlling Fissile Mass or Concentration in an In-Line Monitoring
System, Robert L. Frost (Nucl Safety Assoc)

9:30 a.m.
Hazard Identification of Criticality Accidents at the JCO Facility,
Hitoshi Tamaki, Norio Watanabe, Ken Muramatsu (JAERI-Japan)

10:00 a.m.
The Double Contingency Principle: Qualitative vs. Quantitative Risk
Assessment, Mark M. Mitchell (BWXT)

10:30 a.m.
Double, Double, Toil and Trouble, P. R. Thorne (Nucl Technol-UK)

11:00 a.m.
The DOE Regulatory View of the Double Contingency Principle,
Burton Rothleder (DOE, Germantown)

**WEDNESDAY, NOVEMBER 14 • 1:00 P.M.**

Decontamination and Decommissioning, sponsored by NCSD.
Chair: John Chandler (WSM S)

**Crystal 1**
1:00 p.m.
Characterization and Criticality Safety of K Basin Sludge Collection,
D. G. Erickson, S. F. Kessler, H. Toffer (Fluor Fed Svc)

1:25 p.m.
Nuclear Criticality Safety Issues Involved with Characterizing Fissile
Material for the Paducah U.S. Department of Energy Material Storage
Areas, Paul A. Burdick (Bechtel Jacobs Co), Michael J. Vehec (NISYS
Corp), Tom W. Hines (Navarro Resch Eng)

1:50 p.m.
Evaluation of Incredibility for 321-M D&D at SRS, K. E. Hammer,
M. A. Rosser (WSM S)

2:15 p.m.
Criticality Safety During D&D of Hanford’s 233-S Facility, Leslie C.
Davenport (Bechtel Hanford)

**Geological Disposal**, sponsored by NCSD. Chair: John Chandler
(WSM S)

**Crystal 1**
2:45 p.m.
Criticality Analyses for a Final Disposal of Spent Nuclear Fuel and
Fissile Material Containing Waste in Germany, Bernhard Gmal,
Eberhard Moser (Gesellschaft fuer Anlagen- und Reaktorsicherheit
GRS-Germany), Jörg Thiel (Bundesamt für Strahlenschutz-
Germany)

3:10 p.m.
Repository Criticality Control with Depleted-Uranium-Dioxide
Cermet Waste Packages, Charles W. Forsberg (ORNL)

NOTE: This session will immediately follow the preceding session, which
begins at 1:00 p.m. in the same room.

**Validation—I**, sponsored by NCSD. Chair: Ralph Winiarski
(PORTS)

**Crystal 2**
1:00 p.m.
Verification and Validation of Fast Systems with ENDF/B Data, C. G.
Stenberg, R. D. McKnight (ANL)

1:30 p.m.
Minimum Critical Parameter Searches for U(5)O2 in Homogeneous
and Heterogeneous Systems, Shane Parkey (Univ of Tennessee),
Richard M. Montgomery (Nucl Fuel Svc)

2:00 p.m.
Benchmark Calculations of MARACAS Low Moderation/ Low Enrichment
UO2 Experiments at GNF-A, John F. Zino (GE Nuclear, Wilmington),
Ron E. Paulson (Global Nucl Fuels-Americas)

2:30 p.m.
SCALE 5: New Cross-Section Processing Features and Capabilities,
D. F. Hollenbach, L. M. Petrie, P. B. Fox, K. R. Elam (ORNL)

3:00 p.m.
Source Term on Release Behavior of Radioactive Materials from Fuel
Solution Under Simulated Nuclear Criticality Accident, Hitoshi Abe,
Shinsuke Tashiro, Tadao Kikae, Seigo Okagawa, Ginzo Uchiyama
(JAERI-Japan)

**THURSDAY, NOVEMBER 15 • 8:00 A.M.**

Burnup Credit—III, sponsored by NCSD. Chair: Thomas Doering
(BSC)

**Crystal 1**
8:00 a.m.
Addressing the Axial Burnup Distribution in PWR Burnup Credit
Criticality Safety Analyses, John C. Wagner (ORNL)

8:30 a.m.
Average Burnup and Axial Burnup Profile Measurement for Burnup
Credit Application, Alain Lebrun, Cécile Riffard, Patrick Lagarrigue
(CEA-France), Nicole Courtay (COGEMA), Martial Huver
(EURISYS MESURES)

9:00 a.m.
A New Method to Take Burnup into Account in Criticality Studies
Considering an Axial Profile of Burnup Plus Some Fission Products,
C. Lavarenne (IPSN-France), D. Biron, D. Janvier (EDF/SEPTEN-
France), R. Cousin (INSTN-Saclay-CEA Saclay-France), M. Ducet
(FRAMATOMEANP-France), P. Grouiller, A. Lebrun, N. Thiollay
(CEA-France), E. Guillou (COGEMA-France), G. Leka (SGN-
France), H. Toubou (COGEMA-France)
9:30 a.m. Impact of Integral Burnable Absorbers on PWR Burnup Credit Criticality Safety Analysis, Charlotta E. Sanders, John C. Wagner (ORNL)

10:00 a.m. Comparison of Computational Estimations of Reactivity Margin from Fission Products and Minor Actinides in PWR Burnup Credit, Charlotta E. Sanders, Mark D. DeHart (ORNL)

10:05 a.m. Non-Compliance Tracking and Trending at LLNL, John S. Pearson, Song T. Huang (LLNL)

10:30 a.m. Analysis of Criticality Inspection Findings at BNFL Springfields (UK) — 1992 to 2000, Mike Richardson, Gordon Wadeson, Caroline Webb (British Nucl Fuels-UK)

10:55 a.m. Criticality Safety Event Reporting Experience at NRC Regulated Fuel Cycle Facilities, Dennis C. Morey, Larry J. Berg (NRC)

THURSDAY, NOVEMBER 15 • 1:00 P.M.
Training and Qualification, sponsored by NCSD. Chair: James Morman (ANL)

1:00 p.m. A Standard for Training and Qualification of Criticality Safety Engineers, ANSI/ANS-8.26, J. A. Morman (ANL), J. McKamy (DOE)

1:30 p.m. Qualification and Certification of NRC Criticality Safety Inspectors, Dennis C. Morey, Frank S. Gee (NRC)

2:00 p.m. Training and Qualification for Criticality Safety Personnel: Sandia National Laboratories’ Tailored Approach, Ronald A. Knief (XE Corp), Jeffery S. Philbin (SNL)

EMBEDDED TOPICAL MEETING — 2:
Accelerator Applications/Accelerator Driven Transmutation Technology and Applications ‘01 (AccApp/ADTTA ‘01)
November 12-15, 2001 • Reno, Nevada

MONDAY, NOVEMBER 12 • 10:00 A.M.
Spallation Neutron Sources, sponsored by AAD. Chair: Frank Dietrich (LLNL)

10:00 a.m. Description and Results of Actual R&D Work for the Development of the European Spallation Source (ESS) at FZ-Juelich, Detlef Filges, Werner Braeutigam, Harald Conrad, Guenter Hansen, Hans Ullmaier (FzJ–Germany)

Official Program

Embedded Topical Meeting-2: AccApp/ADTTA ’01

Hidetaka Kinoshita, Hiroyuki Kogawa, Shuichi Ishikura, Atsuhiko Terada, Kaoru Kobayashi, Junichi Adachi, Takushi Teraoku, Toshio Takahashi, Shiro Honmura, Shinobu Sasaki, Ryutaro Hino, Noboru Watanabe (JAERI–Japan)

10:40 a.m.
The ADTF Target and Materials Test Station Design, Michael Cappiello (LANL)

11:00 a.m.
Combined Neutron Center for European Research and Technology, Jean-Michel Lagniel, Jean-Louis Laclare (CEA Saclay–France)

Nuclear Waste Transmutation—I, sponsored by AAD. Chair: Alexander Stanculescu (IAEA–Austria)

Crystal 4
10:00 a.m.
U.S. Plans to Develop and Test Waste Transmutation Technologies, Gregory Van Tuyle (LANL)

10:20 a.m.
Nuclear Waste Partitioning and Transmutation in the Euratom Fifth Framework Programme, Michel Hugon, Ved P. Bhatnagar (European Commission)

10:40 a.m.
Elimination of the Nuclear Waste Coming From the Back-End of the Double Strata Scheme in a Non-Equilibrium Cycle, Miguel Embid, Enrique M. Gonzalez-Romero, A. Perez Parra (Centro de Estudios Energéticos Medioambientales y Tecnológicos)

11:00 a.m.
First Experimental Results at the Mini-Inca Facility, Gabriele Fioni (CEA–France)

Shielding, sponsored by AAD. Chair: Eric Pitcher (LANL)

Crystal 5
10:00 a.m.
Calculations of Operational and Residual Doses for the SNS Linac, Franz X. Gallmeier (ORNL)

10:20 a.m.
MCNPX Versus Handbook Calculations for Radiation Streaming in the SNS Target Carriage, Irina Popova (ORNL)

10:40 a.m.
Neutronic Studies for an Integrated Beam Line Shield Package at the Lujan Center, Guenter Muhrer, Gary Russell, Eric Pitcher (LANL)

11:00 a.m.
Estimates of Residual Radioactivity of the APT Accelerator, Michael Fikani (General Atomics), Eric Pitcher (LANL)

MONDAY, NOVEMBER 12 • 1:00 P.M.

Opening Plenary Session: Nuclear Applications in the New Millennium, Chair: Gregory J. Van Tuyle, General Chair (LANL)

Crystal 3, 4, 5
1:00 p.m.
Opening Remarks: L. Warren Funk, Technical Program Chair (Thomas Jefferson Natl Accelerator Facility)

Honorary Chair’s Perspective: Burton Richter (Stanford Linear Accelerator Center)

Advanced Accelerator Applications Program, John Herczeg (D O E), R. Bruce Matthews (LANL)

IAEA Perspective on Partitioning and Transmutation, Alexander Stanculescu (IAEA–Austria)
European Research and Development on Transmutation, Waclaw Gudowski (RIT–Sweden)

Update on the Spallation Neutron Source Project, Thomas MASON (ORNL)

MONDAY, NOVEMBER 14 • 4:00-6:00 P.M.
Poster Session

Exhibit Hall

Adaptation of Coupled RELAP5/ParCS Code for Pb-Bi Cooled Subcritical Systems, Walter Ambrosini, Francesco Oriolo (University of Pisa–Italy), Giancarlo Fruttuoso (ThEMAS srl), Fosco Bianchi, Fulvio Mattioda, Paride Meloni (ENEA–Italy)

Meaning of Neutron Source Importance in Accelerator Driven System Core Design, Jerzy Cetnar (RIT–Sweden), Grazyna Domanska, Piotr Gronke (University of Mining and Metallurgy, Cracow–Poland)

TRU Transmutation Studies for Phase-Out Scenarios Based on Fast Neutron ADS Systems, Enrique M. Gonzalez–Romero, Miguel Embid–Segura, Antonio Perez–Parra, Maria del Carmen Vicente (Ciemat–Spain)

Effects of Buffer Thickness on ATW Blanket Performance, Won Sik Yang (Chosun University–Korea), Temitope Taiwo, Robert N. Hill, Luigi Mercuriali (ANL)

Preliminary Studies of ATW Multiple Strata Fuel Cycle Performance, Robert Hill, Temitope Taiwo (ANL)

Transmutation of Light Water Reactor–Discharge–Transuranics, Yousry Gohar, Temitope Taiwo Phillip J. Finck (ANL)


Researches on Corrosion Mitigation in MYRRHA Multipurpose ADS for R&D, Vitali Sobolev, Steven Van Dyke, Peter Kupuschus, Hamid Ait Abderrahim (SK/CN–Belgium)

Radiation Damage in AI 6061 Proton Beam Windows for SNS Class Facilities, Monoree S. Wechsler (NCSU), Phillip Ferguson, Louis K. Mansur (ORNL)

Specialized Monte Carlo Codes Versus General-Purpose Monte Carlo Codes, Vadim Moskvin, Xiaoyi Lu (Indiana Univ), Colleen Desrosiers, Lech Papiez (Indiana Univ/Purdue Univ, Indianapolis)

Recent Improvements in the PENELOE Monte Carlo Code, Eduardo Acosta, Jose Fernandez–Varea, Francesc Salvat (Univ de Barcelona–Spain), Josep Sempau (Universitat Politenica de Catalunya)

Integral Nuclear- and Pion-Nucleus Cross-Sections for the Monte Carlo Modeling of ADS, Aleksander A. Polanski, Vladilen S. Barashenkov (Joint Inst for Nucl Rsh)

Neutron Cross-Section Evaluations for Actinides at Intermediate Energies – 239Pu, A. V. Ignatyuk, V. P. Lunev, Yu. N. Shubin, E.V. Gai, N. N. Titarenko (IPPE–Russia), Waclaw Gudowski (RIT–Sweden)

SCANDAL—A Facility for Elastic Neutron Scattering Studies in the 50-130 MeV Range, Jan Blomgren, Joakim Klug (Uppsala Univ–Sweden)

Study of Threshold Reaction Rates Inside and on the Surface of a 0.8-GeV Proton-Irradiated Thick W-Na Target, Yury Titarenko (ITEP–Russia)

Radiation Metrology of the STIP-I Irradiation Using Activation Foils, Michael James (LANL), Guenter Bauer, Yong Dai (Scherrer Inst–Switzerland)


Calculation of Moderator Time Distributions with MCNPX Using Point Detectors and Time-Of-Flight Subtraction, Eric Pitcher, J. David Court, Guenter Muhnr, Gary Russell (LANL), Phillip D. Ferguson (ORNL)

MCNPX Running Parallel Under PVM, Frank X. Gallmeier (ORNL)

Spent Fuel Transmutation in Pressure Water Reactor VVER-440, Petr Darilek (Vuje Tmava), Vladimir Necas, Vladimir Sebian (Slovak Univ of Technol)

Fission Parameters Measurements for Np, Pu, Am, and Cm Isotopes Inside a Salt Blanket Micromodel, Yury Titarenko (ITEP–Russia)


Radiation Safety Assessment for the Long-Term Storage of Spent Fuel from Nuclear Submarines with Lead-Bismuth Coolant, Sviatoslav Ignatiev, Dimitry Pankratov, Boris Gromov, Ludmila Riabya, Evgeny Yefimov (IPPE–Russia), Victor Kalchenko, Vladimir Stepanov (Rsch and Dev Bureau ‘Gidropress’)

Risk Analysis of Spent Nuclear Fuel from Reactors VVER-440, Vladimir Necas, Milos Lascek (Slovak Technic Univ Bratislava), Petr Darilek (Vuje Tmava)

SN S Inner Plug Shipping Cask Analysis, Igor Remec (ORNL)

Material Activation Calculations of Beam Chopper Components for SN S, James J. Yugo, Richard A. Lillie, Jeffrey O. Johnson (ORNL)

Burnup of Cadmium Decoupler Material in the Spallation Neutron Source, Brian D. Murphy, Phillip D. Ferguson (ORNL)

Neutronics Studies for a Long Wavelength Target Station at SNS, Bradley J. Micklich, John M. Carpenter (ANL), Erik B. Iverson (ORNL)

Management Outlook on the Istc Project 559 Implementation, Outstanding Problems and Evolution, Sviatoslav Ignatiev, Evgeny Yefimov (IPPE–Russia)

A Personal Computer-Based Monitoring and Control System for Electron Accelerators, Leo A. Van Ausdell, Kevin J. Haskell, James Litton Jones (IN EEL)

High-Energy Neutron Imaging Development at LNL, James Hall, Frank Dietrich, Clint Logan, Brian Rusnak (LNL)

An Accelerator for Neutron Radiography, Brian Rusnak, James M. Hall, Wilthea J. Hibbard (LNL)
TUESDAY, NOVEMBER 13 • 8:30 A.M.

Neutronics Tools/Data—I, sponsored by AAD. Chair: Detlef Filges (FzJ–Germany)

Crystal 3
8:30 a.m.
Benchmarking Residual Dose Rates in a NuM I-Like Environment, Igor Rakshno, Nikolai Mokhov, Alex Elwyn, Nancy Grossman, Kamran Vaziri (Fermi Natl Accelerator Lab), Mika Huhtinen (CERN–Switzerland), Ludovic Nicolas (Univ of Oregon)

8:55 a.m.
HIN DAS—A European Concerted Action on High and Intermediate Energy Nuclear Data for Accelerator-Driven Systems, Jan Blomgren, Nils Olsson (Uppsala Univ–Sweden), Jean-Pierre Meulders (Univ Catholique de Louvain)

9:20 a.m.
Experimental and Theoretical Investigations to Improve the Predictive Power of Nuclear Reaction Models in Spallation Neutron Production, Detlef Filges, Kay Nuenighoff (FzJ–Germany)

9:45 a.m.
Simulation of Nuclide Transmutations With Monte-Carlo Continuous Energy Burnup Code (MCB), Wacław Gudowski, Jerzy Cetnar, Jan Walleniuss (RIT–Sweden)

10:10 a.m.
Elemental Neutron- and Proton-Induced Displacement and Gas Production Cross Sections for Incident Particle Energies Ranging from 16 to 3120 MeV, Eric Pitcher (LANL)

10:35 a.m.

11:00 a.m.
The nTOF Neutron Time of flight Facility at Cern: Characteristics and Measurements Program, Enrique M. Gonzalez-Romero (Centro de Estudios Energéticos Medioambientales y Tecnológicos)

Systems Engineering/Integration, sponsored by AAD. Chair: Vladimir Lelek (NRI–Czech Republic)

Crystal 4
8:30 a.m.
Choices for and Deployment of Accelerator-Driven Waste Burners, H. artmun Ulrich Wider, Johan Carlsson, Alan Victor Jones (JRC–Italy)

8:55 a.m.
On the Potential of ‘Spallation-Fission’ Hybrids for Prospective Nuclear Power Generation, Igor Slessarev, Alain Zetta (CEA Cadarache–France)

9:20 a.m.
Circe Plant—Test Facility for Integral System into a LBE Reactor Pool, Paolo Turroni (ENEA–Italy)

9:45 a.m.
Some Technical Limitations Imposed on the Accelerator/Target Assembly by a Transmuter Operation, Pavel BEM, Vladim Valenta, Jan Dober (Nuclear Physics Inst, Academy of Sciences of the Czech Republic)

10:10 a.m.
Systemic Analysis, Mapping, Modeling, and Simulation of the Advanced Accelerator Applications Program, Yue Guan (ASTM)

10:35 a.m.
Concept and Development of a Pb-Bi Cooled Experimental ADS, Luciano Cinotti (Ansaldo–Italy)

11:00 a.m.
MYRRHA, a Multipurpose ADS for R&D. Pre-Design Phase Completion, Hamid Ait Abderrahim, P. Kupschus, Ph. Benoit, E. Malambu, K. Van Tichelen, B. Arien, F. Vermeersch, Thierry Aoust, Ch. De Raedt, S. Bodart (SCK/CEN–Belgium), Yves Jongen, D. Vandeplasche, Ph. Van Derkelen (IBA)

Materials for Accelerator Applications, sponsored by AAD. Chair: Monroe Wechsler (NCSU)

Crystal 5
8:30 a.m.
High Nickel Alloys as Material for Molten Salt Applications, Pavel Hosnedl (Skoda Nucl Machinery–Czech Republic), Míloš Novotný and Winfried Dargatz (NRI–Czech Republic)
8:55 a.m. Corrosion Test of US Steels in Lead-Bismuth Eutectic (LBE) and Kinetic Modeling of Corrosion in LBE Systems, Ning Li, Xiaoyi He (LANL), Alexander Rusanov, A. P. Demishonkov (IPPE–Russia)

9:20 a.m. Analysis of a Clad Tungsten Target after Irradiation in an 800 MeV Proton Beam, Stuart A. Maloy, Michael R. James, Walter F. Sommer, Jr. (LANL)

9:45 a.m. Radiation-Induced Stress Relaxation in Austenitic Alloys Exposed to Environments Anticipated in the Accelerator Production of Tritium, William Johnson (General Atomics), MacIntyre R. Louthan (Westinghouse SRC), Phillip L. Rittenhouse (Consultant)

Thermal Hydraulics/Thermal Shock, sponsored by AAD. Chair: Ning Li (LANL)

Crystal 5
10:15 a.m. 3-D Thermal/Hydraulic Analysis of a Liquid-Metal Spallation Target Using CFD, Mark Cerutti, Curtt Ammerman, Keith Woloshun (LANL)

10:40 a.m. Improvements of Thermal-Hydraulic Performance of HYPER Target, Nam-il Tak (KAERI–Korea)

11:05 a.m. Thermal-Hydraulic Design of the MEGAPIE Target, Xu Cheng (FzK–Germany)

2:00 p.m. Molten Salt Demonstration Transmuter (Comparison of New Technical Problems with Old US MSR Plans), Vladimir Lelek (NRI–Czech Republic)

1:30 p.m. Optimization of the Thermal Flux Island in MYRRHA for LLFP Transmutation, Thierry Aoust, Ch. Deraedt, E. Malambu, H. Alit Abderrahim (SCK/CEN–Belgium)

2:00 p.m. Neutronic Studies of the Molten Salt Accelerator-Driven System, Erik J.O. Moller (RIT–Sweden)

2:30 p.m. Incineration of Transuranics in Hard Neutron Spectra, G. Khorasanov, Anatoly Petrovich Ivanov, Anatoly Blokhin, V. V. Sinitsa (IPPE–Russia)

TUESDAY, NOVEMBER 13 • 3:00-5:00 P.M.
Poster Session
Exhibit Hall
Research Program for the Cyclotron Driven Fluoride-Salt Subcritical Assembly at NPI Rez, Karel Matejka (Czech Tech Univ–Czech Republic), Vaclav Valenta, Jan _tursa, Vaclav Kroha, Jan Dobe_, Pavel Bérn (NPI–Czech Republic)

Reactivity Determination in Pulsed Subcritical Systems by Flux Measurements, Piero Ravetto, Piero Bosio, Matteo M. Rostagno, Paolo Vinai (Politecnico di Torino–Italy)

Experimental Validation of the Neutronic Characteristics of the Sub-Critical Multiplying Medium of an ADS: The Muse Experiments, Roland G. Soule (CEA–France)

Experimental ADS with Thorium-Plutonium Fuel, I. V. Puzynin, V. S. Barashenkov (JINR–Russia), V. Kumar (Univ of Rajasthan, Jaipur)

Multi-Stage Proton Cavity Cyclotron, J. L. Hirshfield, Changbiao Wang (Yale Univ), Robert Symons (Litton Electron Devices Division)

Use of Existing Light-Water Reactors and an Accelerator-Driven System for the Transmutation of Spent Nuclear Fuel, Holly Trellue (LANL)

The Sing Sing Core: A Sub-Critical TRU Burner with Low Reactivity Losses, Jan Wallenius, Kamil Tucek, Marcus Eriksson, Waclaw Gudowski (RIT–Sweden)

Simulation of Time-Dependent Processes in Subcritical Systems with MCNP Code, Stefan Taczanowski, Mariusz Kopec (Univ of Mining & Metallurgy)

Sub-Critical Reactor Driven by Electron Accelerator, Danas Ridikas, H. Safa (DAPNIA/SEA, CEA Saclay–France), B. Bernardin (CEA Cadarache–France)

Reactivity Monitoring in ADS with Neutron Fluctuation Analysis, Imre Pazsit (Chalmers Univ of Technol)
Official Program
Heat-Hydrodynamic Processes in the Experimental Model of TC-1 Liquid Metal Target Complex, Yuri Levenko, Andrey Anatoliyich Boronin, Evgeny Ivanov, Yury Ivanovich Orlov, Vladimir Sergeevich Fedotovskiy, Alexandr Pavlovich Sorokin, Alexandr Dmitrievich Yefanov (IPPE–Russia), Ning Li (LANL)

Thermal Shock Induced by a 24 GeV Proton Beam in the Test Windows of the M uon Collider Experiment 951 - Test Results and Theoretical Predictions, Nick Simos (BNL), Kirk McDonald (Princeton Univ)

Review of Refabrication Methods for ATW Fuels and Targets, David F. Williams, Emory D. Collins (ORN L), Louis M. Toth (Electrochemical Systems)

Current U.S. Plans for Development of Fuels for Accelerator Transmutation of Waste, Douglas C. Crawford, Steven Hayes (ANL–Idaho), Mitchell M. eyer (ANL), R. Bruce Matthews, Robert W. M argevicius (LANL)

N-15 Requirement for 2nd Stratum ADS Nitride Fuels, Jan Wallenius (RIT–Sweden), Sylvie Pillon (CEA, Cadarache–France)

Study of the Adiabatic Resonance Crossing (ARC) Technique for the Production of Medical Radioisotopes, Isabelle Tilquin, Pascal Froment, Jean Vervier, Thierry Delbar, Michel Cogneau, Guido Ryczewaert (Catholic Univ of Louvain (UCL))

Neutron Yield of an Electron Accelerator Driven Photoneutron Source for Clinical Environments, Gregory Edward Dale, John Michel Gahl (Univ of Missouri, Columbia)

WEDNESDAY, NOVEMBER 14 • 8:30 A.M.

**ADS System Simulations**, sponsored by AAD. Chair: Sylvie Leray (CEA–France)

Crysta l 3
8:30 a.m.
Critical and Sub-Critical GT-M H Rs Operated in Thorium-Uranium Fuel Cycle, Danas Ridikas (CEA Saclay–France), G. Fioni, L. Bletzacker, R. Plukiene (DAPNIA/SPhN)

8:55 a.m.
The Accelerator Coupled System Dynamics, Antonio D’angelo, G. Bianchini, M. Carta, F. Gabrielli, A. Santagata (EN EA–Italy), Piero Ravetto, P. Bosio, M. M. Rostagno (Politecnico di Torino–Italy)

9:20 a.m.
Generic Issues of Dynamic Response of Sub-Critical Systems (ADS), Michael Schikorr (FzK–Germany)

9:45 a.m.
Neutronic, Kinetic, and Thermal-Hydraulic Calculation of Accelerator Driven Target-Blanket; Cross-Section Libraries Testing, Karel Katovsky, Dusan Kobylka, Jiri Krepel (CTU–Prague)

10:10 a.m.
IAEA Benchmark on Accelerator-Driven Systems, Waclaw Gudowski (RIT–Sweden), Cornelis Broeders (FzK–Germany), Sergey Chigrinov, Anna Klevitksay (Sc and Tech Ctr ‘Sosny’), Yaccine Kadi (CERN–Switzerland), Henk Klippel (Nucl Rsch Consult), Igor Siessarev (CEA, Cadarache–France), Alexander Stanculescu (IAEA–Austria)

10:35 a.m.
Cost Benefit Analysis of Accelerator Driven Systems, Daniel Westlen, Wadaw Gudowski (RIT–Sweden), Luc Van Den Durpel (OECD–France)

11:00 a.m.
Spallation Source Importance Effects in Sub-Critical Media, Per Selberg (KTH–Sweden), Robert Jacqmin (CEA/Cadarache, D E R/SPRC/LEPh–France)

**Medical Imaging and Therapy**, sponsored by AAD. Chair: Colleen Desrosiers (Indiana Univ/ Purdue Univ, Indianapolis)

Crysta l 4
8:30 a.m.
External Beam Radiation Therapy—New Technologies and Treatment Techniques, Lech Papiez (Indiana Univ)

9:00 a.m.
Application of the Energy-Dependent Electron Loss Model to Heterogeneous Media, George Sandison, Tae-Kyu Lee (Purdue Univ)

10:00 a.m.
An Improved Moderator Assembly Design for the OSU Accelerator-Based Neutron Source for Boron Neutron Capture Therapy, Michael T. Orr, Thomas E. Blue, Jeffrey E. Woollard (Ohio State)

10:30 a.m.
Specialized Mont e Carlo Codes Versus General-Purpose Monte Carlo Codes, Vadim Moskvin, Xiaoyi Lu (Indiana Univ), Colleen Desrosiers, Lech Papiez (Indiana Univ/Purdue Univ, Indianapolis)

11:00 a.m.
Recent Improvements in the PEN ELO PE M onte Carlo Code, Eduardo Acosta, Jose Fernandez-Varea, Francesc Salvat (Univ de Barcelona-Spain), Josep Sempau (Universitat Politenica de Catalunya)

**Accelerator Safety Panel**, sponsored by AAD. Chair: L. Warren Funk (Thomas Jefferson Natl Accelerator Facility)

Crysta l 5
8:30 a.m.
**PANELISTS:**
• Bob Lowrie (Westinghouse SM S)
• Laurie Waters (LAN L)
• Vernon Smith (LAN L)

WEDNESDAY, NOVEMBER 14 • 1:00-4:00 P.M.

**ADS System Experiments**, sponsored by AAD. Chair: John Lee (Univ of Michigan)

Crysta l 3
1:00 p.m.
Conceptual Design Study of ADS Experimental Facilities, Toshinobu Sasa, H iroyuki Ogawa, Kenji Kikuchi, Yujiro Ikeda (JAERI–Japan)

1:25 p.m.
Swedish Expert Group on Transmutation, H enri Conde (Uppsala Univ–Sweden)

1:50 p.m.
MEGAPIE-TEST: A European Project on Spallation Target Testing, Joachim Knebel (FzK–Germany)

2:15 p.m.
Special Session—Initiating Ultra-High Compressions and Temperatures in Liquids, sponsored by AAD. Chair: Rusi, Taleyarkhan (ORNL)

Crystal 4
1:00 p.m.
To Be Determined.

Subcritical Assembly Design, sponsored by AAD. Chair: Michael Cappiello (LANL)

Crystal 5
1:00 p.m.
Horizontal Design for an Accelerator-Driven Thermal-Spectrum Molten-Salt Transmuter or Energy Producer, Charles Bowman (ADNA)

1:20 p.m.
The Subcritical Facility ‘Yalina’ to Investigate the Peculiarities of Accelerator Driven Transmutation Technologies, Hanna Kiyavitskaya, Sergei Chigrinov (Acad Sci Tech Ctr), Ivan Serafimovich, Christina K. Rutkovskaja, Yuriy Fokov, M. Khilmanovich, Boris A. M arst inkevich, Victor V. Bournos, Sergei V. Korneev (NAS), Igor Rakhno (Fermi Natl Accelerator Lab)

1:40 p.m.
Evaluation of Importance of Source Neutrons in Accelerator-Driven System, YongHee Kim (KAERI-Korea)

2:00 p.m.
Design Windows for Accelerator Driven Pebble-Bed Transmutators, Jose M. Martinez-Val, Pablo Leon (UPM-Spain), David Saphier (Soreq NRC-Israel), Jose Antonio Fernandez (UPM-Spain)

2:20 p.m.
Height-to-Diameter Ratio Optimization in Accelerator-Driven System, YongHee Kim (KAERI-Korea)

2:40 p.m.
A Neutron Booster for Spallation Sources: Application to Accelerator Driven Systems, Jean Galy, Joseph M agill (European Commission), Hugo Van Dam, Janos Valkó (Interfaculty Reactor Inst)

3:00 p.m.
Nonlinear Perturbation Theory in Application to End of Fuel Cycle Problems and Data Uncertainties, Vladimir Lelek (NRI-Czech Republic)

3:20 p.m.
Analysis of Neutronics Characteristics for EAP-80 Target and Blanket, Evgenii Yefimov, Evgenii Zemskov, Vadim Chekunov, Dina Rachkova (IPPE-Russia), Waclaw Gudowski (RIT-Sweden)

THURSDAY, NOVEMBER 15 • 8:30 A.M.

Target Engineering, sponsored by AAD. Chair: Tony Gabriel (ORNL)

Crystal 3
8:30 a.m.
Conceptual Design of Molten Lead-Bismuth Target Complex for ADS, Evgenii Yefimov, Alexandr Dedoul, Boris Gromov, Evgenii Zemskov, Konstantin Ivanov, Michail Leonchuk, Yuriy Orlov, Dmitry Pankratov, Zina Sivack, Vladimir Troyanov, Nikolay Khayevey, Vladimir Chityaykin, Vadim Chekunov (IPPE-Russia), Nikolay Klimov, Michail Koulikov, Vladimir Stepanov (Exp and Des Org “Gidropress”), Teruki Kitano, M ikonori O no (Mitsui Engineering & Shipbuilding)

8:55 a.m.
Study of Lead Coolant Technology, Yuriy Orlov, Valery Alekseevich Gylevsky, Petr Nikiforovich Martinov, Alexandr Dmitrievich Ef anov (IPPE-Russia)

9:20 a.m.
Tests and Studies for a Liquid Metal Free Surface Target for an ADS Reactor, Paolo Turroni (EN EA-Italy)

9:45 a.m.
Conceptual Designs for a Spallation Neutron Target Constructed of a Helium-Cooled, Packed Bed of Tungsten Particles, Curtt Ammerman, Keith Woloshun, Xioyi He, Michael James, Ning Li, Valentina Tchamotskaia, Stephen A. W ender (LANL)

10:10 a.m.
SNS Target Test Facility: Prototype Hg Operations and Remote Handling Tests, Philip Spampinato (ORNL)

10:35 a.m.
Dynamic Thermal Performance Analysis of a Target and Heat Removal System for an Accelerator-Based Neutron Source for Boron Neutron Capture Therapy, Thomas E. Blue, James E. Mathias, Christian Mariulescu, Zhaohui Gong, Jeffrey E. W oollard (Ohio State)

11:00 a.m.
Conditions Around the Proton Window of the Spallation Neutron Source, Felix C. Difilippo (ORNL)

Education Programs, sponsored by AAD. Chair: Denis Beller (LANL)

Crystal 4
8:30 a.m.
University Programs of the U.S. Department of Energy Advanced Accelerator Applications Program, Denis Beller (UNLV), James Bresee, Thomas Ward (DOE)

8:50 a.m.
Establishment of an Advanced Accelerator Applications University Participation Program at the University of Nevada, Las Vegas, Anthony H echanova (UNLV)

9:10 a.m.
AAA—University Fellowship Program for 2001: Process, Progress and Prospects, Freddie Davis, Cathy Dixon (Univ of Texas, Austin)
9:30 a.m.
Preparation of Specialists for ADS on CTU Prague, FNSPE, DNR, Karel M. Matejka, Jaroslav Zeman (CTU–Prague)

9:50 a.m.
Investigation of Corrosion of Steel by Lead Bismuth Eutectic, John Farley, Dan Koury (UNLV), Dale L. Perry (LBNL)

10:10 a.m.
Feasibility Study of a Once-Through Molten-Salt Reactor for Nuclear Waste Transmutation, Ehud Greenspan, Hiroshi Sagara, Hiroshi Matsumoto, Elena Rodriguez-Viete (Univ of California), Micah Lowenthal (NAS)

10:30 a.m.
Cross-Validation of Neutronics Tools for ATW System Design, Jeff Davis, David Griesheimer, Ruben Sorensen, James P. Holloway, John C. Lee (Univ of Michigan)

10:50 a.m.
Fast Flux Depressions Due to Nonelastic Effects in Lead and Bismuth, James P. Holloway (Univ of Michigan)

11:10 a.m.
Effect of Hydrogen on Environment-Induced Cracking of Target Materials, Ajit Roy (UNLV)

Transmutation Fuels, sponsored by AAD. Chairs Mitchell Meyer (ANL), Steven Hayes (ANL–Idaho)

Crystal 5
8:30 a.m.
CONFIRM : Collaboration on Nitride Fuel Irradiation and Modelling, Jan Wallenius (RIT–Sweden)

8:50 a.m.
A Deformation Model of TRU Metal Dispersion Fuel Rod, Woon Hwang, B.O. Lee (KAERI–Korea)

9:10 a.m.

9:30 a.m.
Fuels Development for Minor Actinide Transmutation, Didier Jean Haas (European Commission)

9:50 a.m.
Research on Nitride Fuel for Transmutation of Minor Actinides, Kazuo Minato, Yasuo Arai, Mitsuo Akabori (JAERI–Japan)

10:10 a.m.
Fabrication of Transuranic Nitride Fuels for Accelerator Transmutation of Waste, Robert Margevicius, Harold T. Blair, Kenneth M. Chidester, Kenneth J. McClellan (LANL)

10:30 a.m.
Status of the European Programme on ADS Fuels, Sylvie Pillon (CEA, Cadarache–France)

10:50 a.m.
Characterisation of a Zirconia - Plutonia Inert Matrix Fuel for Understanding its Material Behaviour as a Nuclear Fuel for LWR, Claude Degueldre, Franz Ingold, Christian Hellwig, M. Dobeli (PSI), Steven Conradson (LANL), Y.-W. Lee (KAERI–Korea)

COMMITTEE MEETINGS

NATIONAL COMMITTEES

Accreditation Policies and Procedures
Sunday, 5:00 p.m. - 7:00 p.m.
Room: Whitney

Board of Directors
Thursday, 8:00 a.m. - 4:00 p.m.
Room: Carson 1 & 2

Board of Directors/Divisions Reports
Wednesday, 2:00 p.m. - 4:00 p.m.
Room: Ruby 1 & 2

Book Publishing
Sunday, 11:00 a.m. - 12 noon
Room: N-3

Bylaws & Rules
Sunday, 1:30 p.m. - 4:00 p.m.
Room: N-11

Executive Conference Review

Finance
Tuesday, 4:00 p.m. - 7:00 p.m.
Room: Whitney

Honors & Awards
Monday, 4:00 p.m. - 7:00 p.m.
Room: Cascade 1

International
Tuesday, 4:00 p.m. - 7:00 p.m.
Room: Ruby 1 & 2

Local Sections/Workshop
Sunday, 8:00 a.m. - 12 noon
Room: McKinley

Meetings Proceedings/Transactions
Monday, 7:30 a.m. - 8:30 a.m.
Room: Cascade 2

Membership
Sunday, 11:00 a.m. - 1:00 p.m.
Room: N-10

Sunday, 10:00 a.m. - 12:00 noon
Room: Ruby 1

Sunday, 7:30 p.m. - 9:30 p.m.
Room: Shasta 1

NSA Editorial Advisory
Sunday, 9:00 a.m. - 10:00 a.m.
Room: N-7

NT Editorial Advisory
Sunday, 10:00 a.m. - 11:00 a.m.
Room: Whitney

Nuclear News Editorial Advisory
Sunday, 4:00 p.m. - 5:30 p.m.
Room: N-2

Planning
Sunday, 2:00 p.m. - 6:00 p.m.
Room: Shasta 1

President's Meeting with Committee Chairs
Sunday, 9:00 a.m. - 10:00 a.m.
Room: Crystal 1 & 2

2001 ANS WINTER MEETING: “NUCLEAR RESEARCH AND DEVELOPMENT”
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<td><strong>Business Practices</strong></td>
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<td>Saturday, 1:00 p.m. - 6:00 p.m.</td>
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<tr>
<td>Room: Shasta 1</td>
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<tr>
<td><strong>New Construction</strong></td>
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<tr>
<td>Monday, 4:00 p.m. - 7:00 p.m.</td>
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<td>Room: Cascade 2</td>
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<td><strong>Non-Proliferation</strong></td>
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<td>Sunday, 4:30 p.m. - 6:30 p.m.</td>
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<td>Room: Ruby 1</td>
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<td><strong>Nuclear Societies Cooperation</strong></td>
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<td>Monday, 4:00 p.m. - 6:00 p.m.</td>
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<td>Room: Ruby 2</td>
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<td><strong>Nuclear Workforce</strong></td>
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<td>Sunday, 12:00 p.m. - 1:30 p.m.</td>
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<td>Room: Teton 2</td>
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<td><strong>Utility Outreach</strong></td>
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<td>Sunday, 1:00 p.m. - 4:00 p.m.</td>
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<td><strong>Accelerator Applications</strong></td>
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<td>Executive</td>
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<td>Sunday, 4:30 p.m. - 6:30 p.m.</td>
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<td>Room: Shasta 2</td>
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<td>Program/Membership</td>
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<td>Sunday, 1:30 p.m. - 3:30 p.m.</td>
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<td>Room: Shasta 2</td>
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<tr>
<td><strong>Aerospace Nuclear Science &amp; Technologies Committee</strong></td>
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<td>Sunday, 10:00 a.m. - 11:30 a.m.</td>
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<td>Room: N-9</td>
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<tr>
<td><strong>Biology &amp; Medicine</strong></td>
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<td>Committee of the Whole</td>
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<td>Sunday, 4:00 p.m. - 5:30 p.m.</td>
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<td>Room: Crystal 2</td>
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<tr>
<td><strong>Decommissioning, Decontamination &amp; Reutilization Committee Meeting</strong></td>
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<td>Sunday, 1:00 p.m. - 5:30 p.m.</td>
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<td>Room: McKinley</td>
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<td><strong>Education &amp; Training</strong></td>
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<td>Alpha Nu Sigma Officers</td>
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<tr>
<td>Sunday, 11:00 a.m. - 12 noon</td>
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<td>Room: N-2</td>
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<tr>
<td>Executive/Membership/Honors &amp; Awards</td>
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<td>Sunday, 1:30 p.m. - 4:00 p.m.</td>
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<td>Room: N-8</td>
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<td><strong>Environmental Sciences</strong></td>
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<tr>
<td>Executive</td>
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<td>Sunday, 10:00 a.m. - 2:30 p.m.</td>
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<td>Room: N-6</td>
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<td>Program</td>
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<td>Sunday, 8:30 a.m. - 10:00 a.m.</td>
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<td><strong>Fuel Cycle &amp; Waste Management</strong></td>
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<td>Executive</td>
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<td>Sunday, 3:30 p.m. - 5:30 p.m.</td>
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<td>Program</td>
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<td>Sunday, 1:00 p.m. - 3:30 p.m.</td>
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<td>Room: N-5</td>
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<td><strong>Technical Operating Committee</strong></td>
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<td>Sunday, 12 noon - 1:00 p.m.</td>
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<td>Monday, 7:30 p.m. - 10:00 p.m.</td>
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<td>Room: Shasta 1</td>
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<td><strong>Eagle Alliance - Board of Directors</strong></td>
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<td>Sunday, 1:00 p.m. - 3:30 p.m.</td>
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<td><strong>ICAPP Planning Meeting</strong></td>
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<td>Tuesday, 5:00 p.m. - 7:00 p.m.</td>
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<tr>
<td><strong>Mathematics &amp; Computation/Reactor Physics/Radiation Protection &amp; Shielding</strong></td>
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<td>Sunday, 11:00 a.m. - 1:00 p.m.</td>
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<td>Room: N-7</td>
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<td><strong>NEDHO</strong></td>
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<td>Monday, 4:30 p.m. - 6:00 p.m.</td>
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<td>Room: Shasta 1</td>
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<td><strong>TRTR Executive Committee</strong></td>
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<td>Saturday, 3:00 p.m. - 5:00 p.m.</td>
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<td>Room: Shasta 2</td>
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<td><strong>UWC 2002 Planning Committee</strong></td>
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<td>Sunday, 10:00 a.m. - 11:30 a.m.</td>
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<td>Room: N-11</td>
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Committee Meetings

**Fusion Energy**
Executive  
Sunday, 3:00 p.m. - 5:00 p.m.  
Room: Teton 2

**Human Factors**
Program & Executive  
Monday, 4:30 p.m. - 6:30 p.m.  
Room: Teton 2

**Isotopes & Radiation**
Executive  
Sunday, 2:30 p.m. - 4:00 p.m.  
Room: Crystal 2  
Joint Program Committee -  
IRD & B&M  
Sunday, 1:30 p.m. - 2:30 p.m.  
Room: Crystal 2

**Materials Science & Technology**
Executive  
Wednesday, 7:00 p.m. - 9:00 p.m.  
Room: Cascade 2

**Mathematics & Computation**
Executive  
Sunday, 2:00 p.m. - 4:00 p.m.  
Room: N-7  
Program  
Sunday, 1:00 p.m. - 2:00 p.m.  
Room: N-7

**Nuclear Criticality Safety**
Education  
Sunday, 10:00 a.m. - 11:00 a.m.  
Room: N-10  
Executive  
Sunday, 3:00 p.m. - 5:30 p.m.  
Room: N-10  
Program  
Sunday, 1:00 p.m. - 3:00 p.m.  
Room: N-10

**Nuclear Installation Safety**
Executive  
Monday, 5:00 p.m. - 8:00 p.m.  
Room: Parlor 256  
Program  
Sunday, 7:30 p.m. - 11:00 p.m.  
Room: N-3

**Operations & Power**
Executive  
Sunday, 3:30 p.m. - 6:00 p.m.  
Room: Crystal 1

**Program**  
Sunday, 1:00 p.m. - 3:30 p.m.  
Room: Crystal 1

**Radiation Protection & Shielding**
Executive  
Monday, 6:00 p.m. - 8:00 p.m.  
Room: Teton 1

**Reactor Physics**
Executive  
Sunday, 4:00 p.m. - 6:00 p.m.  
Room: N-9  
Goals & Planning  
Sunday, 12 noon - 2:00 p.m.  
Room: N-9  
Program  
Sunday, 2:00 p.m. - 4:00 p.m.  
Room: N-9

**Robotics & Remote Systems**
Executive  
Sunday, 1:00 p.m. - 5:00 p.m.  
Room: Ruby 2

**Thermal Hydraulics**
Executive  
Sunday, 4:00 p.m. - 6:00 p.m.  
Room: N-4

**Honors & Awards**
Tuesday, 5:00 p.m. - 7:00 p.m.  
Room: Shasta 1  
Program  
Sunday, 2:00 p.m. - 4:00 p.m.  
Room: N-4

**STANDARDS COMMITTEES**

**ANS 8**  
Friday, 7:30 a.m. - 9:30 a.m.  
Room: McKinley

**ANS 8.26**  
Tuesday, 7:00 a.m. - 8:30 a.m.  
Room: Ruby 1

**ANS 19**  
Monday, 8:00 a.m. - 10:00 a.m.  
Room: Parlor #157

**19.3**  
Monday, 4:00 p.m. - 6:00 p.m.  
Room: Parlor #157

**ANS 19.6.1**  
Saturday, 8:00 a.m. - 5:00 p.m.  
Room: Teton 1

**ANS 19.10**  
Sunday, 9:00 a.m. - 12 noon  
Room: Shasta 2

**DD & R Standards**  
Tuesday, 7:00 a.m. - 8:30 a.m.  
Room: Cascade 1

**DD & R Standards and Numbers**
1. 3.12.1 - DDR Security
2. 3.12.2 - DDR Security
3. 3.12.3 - DDR Training  
Thursday, 8:00 a.m. - 10:00 a.m.  
Room: Cascade 1

**Reactor Physics Standards**  
Sunday, 10:00 a.m. - 12 noon  
Room: N-5

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**The Best of Both Worlds**
Indoor & outdoor options in between meetings

Acres and acres of snow-covered mountains offer visitors breathtaking views and outdoor fun, such as skiing and many other snow-related activities. After a full day of meetings, satisfy your appetite at one of the great restaurants located inside the Reno Hilton Hotel.
PURPOSE:
The US Department of Energy Nuclear Criticality Safety Program (NCSP) was initiated in response to DNFSB Recommendation 97-2, "Continuation of Criticality Safety". The NCSP is a comprehensive, crosscutting program that integrates the need to maintain the US criticality safety infrastructure with effective support for criticality safety programs throughout the DOE complex. This session presents the status of the NCSP elements with highlights of recent accomplishments and descriptions of near-term plans. Presentations will be given by DOE management and the DNFSB staff. These sessions, while not part of the official ANS program, have been arranged through the courtesy of the ANS Headquarters staff. The presentations are intended to report on the DOE NCS Program, but because of the global application of the products developed by the DOE NCSP, feedback is encouraged from anyone interested in the needs of a diverse, well-organized criticality safety program. International, NRC and licensees NCS personnel are encouraged to participate. Extensive audience participation is anticipated.

DETAILED SCHEDULE:
9:30 a.m. Introduction (A. Garcia - DOE)

9:40 a.m. Nuclear Criticality Safety Program Status (J. Felty - SAIC/NNSA)

10:00 a.m. DNFSB Staff Comments on Criticality Safety within DOE

10:45 a.m. Criticality Experiments (S. Clement - LANL)

11:00 a.m. Benchmarking (B. Briggs - BBWI, INEEL)

11:15 a.m. Training and Qualification (T. McLaughlin - LANL, J. Morman - ANL)

11:35 a.m. NCSP Web Site Development (S. Huang - LLNL)

11:45 a.m. AROBCAD (C. Hopper - ORNL)

12:00 p.m. Lunch

1:00 p.m. Criticality Safety Information Resource Center, Information Preservation and Dissemination (T. McLaughlin - LANL)

1:15 p.m. Analytical Methods (M. Westfall - ORNL)

1:30 p.m. Nuclear Data ORELA Measurements (L. Leal - ORNL)

1:45 p.m. Cross Section Evaluations (T. Valentine - ORNL)

2:00 p.m. (D. McKnight - ANL)

2:15 p.m. (R. Little - LANL)

2:30 p.m. End-Users Group (DOE Contractor NCS Personnel) (T. Taylor - BBWI)

3:30 p.m. Open Discussion (A. Garcia - DOE)

4:00 p.m. Adjourn
Introduction

The ANS Nuclear Technology Expo is being held November 11-13 in the Nevada Conference and Exhibit Center of the Reno Hilton Hotel. The Expo opens Sunday for the ANS President's Reception from 6-7:30pm.

The ANS Expo highlights state-of-the-art products and services. Representatives from leading organizations will be on hand to answer your questions. An alphabetical list of the organizations participating in the Expo follows.
WE THANK THE FOLLOWING COMPANIES FOR THEIR GENEROUS SUPPORT OF THE ANS EXPO SPECIAL EVENTS:

Atomic Energy of Canada Limited

Bechtel Nuclear Power

BNFL, Inc.

Eagle-Picher Technologies, LLC

EXCEL Services Corporation

Westinghouse Electric Company