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2013 International High-Level
Radioactive Waste Management Conference

“Integrating Storage, Transportation, and Disposal”

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Conference Officials

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Vice President, Beijing Research Institute of Uranium Geology Head, HLW Disposal Program, China

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Kevin McMahon
(Sandia National Laboratories)

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Hanson, Brady (Pacific Northwest National Laboratory (PNNL), USA)
Kozak, Matt (INTERA Inc., USA)

Kremer, Erik (Nuclear Waste Management Organization (NWMO), Canada)
McCombie, Charles (Arias Association, Switzerland)
McMurry, Jude (Center for Nuclear Waste Regulatory Analyses (CNWRA, USA)
Pickett, David (Center for Nuclear Waste Regulatory Analyses (CNWRA), USA)
Rechard, Rob (Sandia National Laboratories (SNL), USA)
Rondinella, Vincenzo (Institute for Transuranium Elements (ITE), Germany)
Sowder, Andrew (Electric Power Research Institute (EPRI), USA)
Vomvoris, Stratis (NAGRA)
Weiner, Ruth (Sandia National Laboratories (SNL), USA)
Conference Information

SPONSOR
Sponsor: American Nuclear Society
Cooperation is expected from numerous professional and technical societies, national laboratories, federal agencies and commercial organizations throughout the world.

ACCOMMODATIONS/HOTEL INFORMATION
The Albuquerque Marriott, located at 2101 Louisiana Blvd., NE, Albuquerque, New Mexico, 87110, will be the location for the 2013 International High-Level Radioactive Waste Management Conference Topical Meeting, where all meeting activities and technical sessions will take place.

CONFERENCE PROCEEDINGS
This year’s conference proceedings is available on CD-ROM. Copies of the conference proceedings will be available on-site. Each registrant will receive a copy of the proceedings as part of the registration fees. Additional copies may be purchased at the conference registration desk for $195.00.

To purchase copies following the conference, you may contact the ANS Accounting Department at 708-579-8210 (phone); 708-579-8314 (fax); accounting@ans.org (email); or submit your request in writing to: American Nuclear Society, 97781 Eagle Way, Chicago, IL 60678-9770. Payment information must accompany all orders.

SPEAKER REGISTRATION
All speakers are required to register for the conference in advance and to submit a registration fee. Speakers and session chairs are requested to check-in at the speakers’ desk located at the Grand Ballroom Foyer of the Albuquerque Marriott Hotel at least one day prior to their presentation.

CONFERENCE REGISTRATION
Registration is required for all attendees and presenters. Badges are required for admission to all events.

• The Full Conference Registration Fee includes admission to all technical sessions, the opening reception, the conference luncheon and the conference proceedings (CD-Rom)

• The Daily Conference Registration Fee includes admission to technical sessions on the day registered and the conference proceedings (CD-Rom)

• The Student Registration Fee includes admission to all technical sessions and the conference proceedings (CD-Rom).

A full-time student i.d. is required.

Note: Additional tickets can be purchased at the ANS registration desk for the Opening Reception and the Conference Luncheon.

CONFERENCE REGISTRATION HOURS
The ANS registration and message desks will be located in the Grand Ballroom Foyer of the Albuquerque Marriott Hotel. You may register, purchase tickets for events, or pick up your registration packet during the following hours:

- SUNDAY, APRIL 28, 2013
  12:00 PM - 5:00 PM
- MONDAY, APRIL 29, 2013
  7:00 AM - 7:00 PM
- TUESDAY, APRIL 30, 2013
  7:00 AM - 5:00 PM
- WEDNESDAY, MAY 1, 2013
  7:00 AM - 5:00 PM
- THURSDAY, MAY 2, 2013
  7:00 AM - 1:00 PM

SOCIAL FUNCTIONS
OPENING RECEPTION
MONDAY, APRIL 29, 2013
7:00 PM – 9:00 PM
Location: Grand Salon E
Each full conference registrant will receive a ticket for the reception. Additional tickets may be purchased at the ANS registration desk for $95.00.

CONFERENCE LUNCHEON
TUESDAY, APRIL 30, 2013
12:00 PM – 1:00 PM
Location: Grand Salon E
Each full conference registrant will receive a ticket for the luncheon. Additional tickets may be purchased at the ANS registration desk for $50.00.
Monday, April 29, 2013

7:00 AM–7:00 PM  Conference Registration
7:30 AM–9:00 AM  Continental Breakfast
8:00 AM–8:25 AM  Welcome and Opening Remarks
8:25 AM–10:00 AM  Plenary—I: Perspectives on the Backend of the Fuel Cycle, Dr. Allison Macfarlane (NRC)
Blue Ribbon Commission, Dr. Per Peterson (Univ of California)

10:00 AM–10:15 AM  Break
10:15 AM–11:15 AM  Plenary—II: How Did We Actually Get Into This Mess?, A. David Rossin (Rossin & Assoc)

11:20 AM–1:00 PM  Panel Discussion—I: Waste from Recycling
1:00 PM–2:00 PM  Lunch Break
2:00 PM–3:40 PM  Technical Sessions
  • Biosphere
  • Natural Systems for Disposal (Generic and Site-Specific)
  • Storage of Used Nuclear Fuel and High Level Waste
  • Engineered Systems for Disposal
  • Regulatory Topics

3:40 PM–3:50 PM  Break
3:50 PM–5:30 PM  Technical Sessions
  • Regulatory Topics
  • Natural Systems for Disposal (Generic and Site-Specific)
  • Storage of Used Nuclear Fuel and High Level Waste
  • Engineered Systems for Disposal
  • Advanced Fuel Cycles: Impacts on Waste Management

7:00 PM–9:00 PM  Opening Reception

Tuesday, April 30, 2013

7:00 AM–5:00 PM  Conference Registration
7:00 AM–8:00 AM  Continental Breakfast
8:00 AM–9:00 AM  Plenary—III: China’s Nuclear Energy Program, Dr. Ju Wang
9:00 AM–10:15 AM  Panel Discussion—II: Discussion of activities in China
10:15 AM–10:30 AM  Break
10:30 AM–12:10 PM  Technical Sessions
  • Total Repository System (Generic and Site-Specific)
  • Natural Systems for Disposal (Generic and Site-Specific)
  • Storage of Used Nuclear Fuel and High Level Waste (2 concurrent sessions)
  • Engineered Systems for Disposal
12:10 PM–1:30 PM  Lunch Break
1:30 PM–3:10 PM  Technical Sessions
  • Total Repository System (Generic and Site-Specific)
  • Natural Systems for Disposal (Generic and Site-Specific)
  • Storage of Used Nuclear Fuel and High Level Waste
  • Engineered Systems for Disposal
  • Institutional Topics (With Emphasis on Lessons Learned)
  • Advanced Fuel Cycles: Impacts on Waste Management
3:10 PM–3:30 PM  Break
3:30 PM–5:10 PM  Technical Sessions
  • Total Repository System (Generic and Site-Specific)
  • Engineered Systems for Disposal
  • Institutional Topics (With Emphasis on Lessons Learned)
  • Storage of Used Nuclear Fuel and High Level Waste

Wednesday, May 1, 2013

7:00 AM–5:00 PM  Conference Registration
7:00 AM–8:00 AM  Continental Breakfast
8:00 AM–10:15 AM  Plenary—IV & Panel—III: Fast Reactors as a Means of Closing the Fuel Cycle, Paul Dickman (ANL)
10:15 AM–10:30 AM  Break
10:30 AM–12:10 PM  Technical Sessions
  • Total Repository System (Generic and Site-Specific)
  • Natural Systems for Disposal (Generic and Site-Specific)
  • Storage of Used Nuclear Fuel and High Level Waste
  • Engineered Systems for Disposal
  • Advanced Fuel Cycles: Impacts on Waste Management
12:10 PM–1:30 PM  Lunch Break
1:30 PM–3:10 PM  Technical Sessions
  • Total Repository System (Generic and Site-Specific)
  • Natural Systems for Disposal (Generic and Site-Specific)
  • Storage of Used Nuclear Fuel and High Level Waste
  • Engineered Systems for Disposal
  • Institutional Topics (With Emphasis on Lessons Learned)
  • Advanced Fuel Cycles: Impacts on Waste Management
3:10 PM–3:30 PM  Break
3:30 PM–5:10 PM  Technical Sessions
  • Total Repository System (Generic and Site-Specific)

Thursday, May 2, 2013

7:00 AM–1:00 PM  Conference Registration
7:30 AM–8:30 AM  Continental Breakfast
8:00 AM–9:15 AM  Panel Discussion—V: Large-Volume Wastes from Accident Clean Ups, Charles Forsberg (ORNL)
9:15 AM–11:00 AM  Plenary—V: Consent-Based Nuclear Facility Siting, Hank Jenkins-Smith (Univ of Oklahoma)
11:00 AM–11:10 AM  Break
11:10 AM–12:50 PM  Technical Sessions
  • Biosphere
  • Natural Systems for Disposal (Generic and Site-Specific)
  • Storage of Used Nuclear Fuel and High Level Waste
  • Engineered Systems for Disposal
  • High-level Radioactive Waste Transportation
12:50 PM–1:50 PM  Box Lunch Social
1:50 PM  Conference Adjourns
MONDAY, APRIL 29, 2013, 8:00 AM–8:25 AM
Welcome and Opening Remarks
Grand Salon F
Kevin McMahon (SNL)
Barry Butterfield (HDR Engineering)

MONDAY, APRIL 29, 2013, 8:25 AM–10:00 AM
Plenary—I: Perspectives on the Backend of the Fuel Cycle
Grand Salon F

SPEAKERS:

Nuclear Waste Policy
Dr. Allison Macfarlane (NRC)

Blue Ribbon Commission
Dr. Per Peterson (Univ of California)

MONDAY, APRIL 29, 2013, 10:00 AM–10:15 AM
Break

MONDAY, APRIL 29, 2013, 11:20 AM–1:00 PM
Panel Discussion—I: Waste From Recycling
Grand Salon F

Moderator: Paul Murray (AREVA)

11:20 a.m.
(6907) Utilization of Used Nuclear Fuel in a Potential Future U.S. Fuel Cycle Scenario
Andrew Worrall (ORNL)

11:45 a.m.
(6927) Evaluating Feasibility of Reactor Grade Mixed Oxide Fuel Use in U.S. Reactors: Application of EPRI’s Decision Analysis Framework
Andrew A. Dykes, David H. Johnson (ABSG Consulting, Inc.), Andrew G. Sowder, Albert J. Machiels (EPRI)

12:10 p.m.
(6989) An Expert, Top-Level Risk Assessment for Deployment of Future Fuel Cycles
Steven Krahn (Vanderbilt Univ), John Vienna (PNNL), Albert Croff (Vanderbilt Univ), Albert Machiels, Andrew Sowder (EPRI)

12:35 p.m.
(7012) Assessment of Used Nuclear Fuel Inventory Relative to Disposition Options
John C. Wagner, Joshua L. Peterson, Donald E. Mueller, Jess C. Gehin, Andrew Worrall (ORNL), Temitope Taiwo, Mark Nutt, Mark A. Williamson, (ANL), Michael Todosow (BNL), Roald Wigeland (INL), William G. Halsey (LLNL), Ronald P. Omberg (PNNL), Peter N. Swift (SNL), Joe Carter (SRNL)

MONDAY, APRIL 29, 2013, 1:00 PM–2:00 PM
Lunch Break

MONDAY, APRIL 29, 2013, 2:00 PM–3:40 PM
Track 4, Session 1: Biosphere
Organizer: Andrew Sowder
Chair: Nava Garisto (SENES Consultants)
Grand Salon G/H

2:00 p.m.
(6990) Model Development for Transport of Radionuclides via Heterogeneous Geological Media
Bret Patrick Van den Akker, Joonhong Ahn (Univ of California, Berkeley)

2:25 p.m.
(6707) Algebraic Calculation of ERB Dilution, Capture, Retardation, Decay, and Dose
Paul E. Mariner (SNL)

3:15 p.m.
(6873) Short-Term Period Simulation of Atmospheric Dispersion on Braka NPP Site Area
Jong Kuk Lee (KAIST), Jae Chul Kim (Kangwon National Univ), Kun Jae Lee (KAIST)
Technical Sessions

Track 2, Session 1: Natural Systems for Disposal (Generic and Site-Specific)

Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)
Chair: Erik Kremer (NWMO)

Grand Salon A/B
2:00 p.m.
(6835) A Characterization Study of Fault Zone Hydrology
Kenzi Karasaki (LBNL), Celia T. Onisha (USGS), Kenzo Kiho (CRIEPI), Junichi Goto (NWMO)
2:25 p.m.
(6915) Historic Testing Relevant to Disposal of Heat-Generating Waste in Salt
Kristopher Kuhlman (SNL)
2:50 p.m.
(6839) Sensitivity Analysis on Impact of Continental Glaciation on Radionuclide Transport
Shaoping Chu, Scott L. Painter (LANL)
3:15 p.m.
(6875) Assessment of Alternative Host-Rock Distribution in the U.S. Using GIS
Frank V. Perry, Patrick F. Dobson (LBNL), Richard E. Kelley (LANL)

Track 7, Session 1: Storage of Used Nuclear Fuel and High Level Waste

Organizers: Brady Hanson (PNPL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Keith Waldrop (EPRI)

Cimarron
2:00 p.m.
(6868) Logistics Case Study for Shipping Used Nuclear Fuel from Shutdown Reactor Sites
E. A. Kalinina (SNL), I. K. Busch (ORNL), P. E. McConnell (SNL), S. J. Maheras (PNPL)
2:25 p.m.
(6981) Used Fuel Management System Architecture and Interface Analyses
W. Mark Nutt (ANL), Robert Howard, Ingrid Busch (ORNL), Joe Carter, Phillip Rodwell, Alexcia Delley (SRNL), Elena Kalinina, Ernest Hardin (SNL), Thomas Cotton (Complex Systems)
2:50 p.m.
(6985) A Modular Design Concept for a Used Nuclear Fuel Repackaging Facility
R. L. Howard, D. R. Giuliano, T. L. Lessard (ORNL), J. T. Carter, P. O. Rodwell (SRNL)

Track 3, Session 1: Engineered Systems for Disposal

Organizers: Frank Garisto (NWMO), Asdul Chowdhury (CNWRA), David Pickett (CNWRA)
Chair: Frank Garisto (NWMO)

Carlsbad
2:00 p.m.
(6713) Concept Plan for a High Burn-Up Fuel Storage and Transportation Confirmatory Data Project
Marcus Nichol, Rodney McCullum (NEI), John Kessler, Keith Waldrop (EPRI), Tom Brookmire (Dominion), Paul Murray (AREVA Federal Services), Steve Nesbit (Duke Energy)
2:25 p.m.
(6827) Spent Fuel Storage in Dual Purpose Casks Beyond the Original Design Basis
Holger Volzke, Dietmar Wolff (BAM Federal Inst for Materials Research and Testing)
2:50 p.m.
(6830) Potential Stress on Cladding Imposed by the Matrix Swelling from Alpha Decay in High Burnup Spent Nuclear Fuel
Tae Ahn (NRC), V. Rondinella, T. Wiss (European Commission, Institute for Transuranium Elements)
3:15 p.m.
(6832) Extended Dry Storage and Transportation: Model for Evaluating of Vacuum Drying Adequacy
T. Ahn (NRC), Jung, P. K. Shukla, E. L. Tipton, (CNWRA),

Track 7, Session 2: Storage of Used Nuclear Fuel and High Level Waste

Organizers: Brady Hanson (PNPL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Keith Waldrop (EPRI)

Grand Salon I/J
2:00 p.m.
(7020) The Logic and Benefits of a Regional Approach to HLW, SNF, and TRU Waste Disposal in New Mexico
Christopher M. Timm (PECOS Management Services, Inc.)
2:25 p.m.
(6872) Recent Technical Issues Raised by the State of Nevada to be Addressed Should the Yucca Mountain License Application Process be Restarted
Michael Voegele, Darrell Lacy (NWRPO)
MONDAY, APRIL 29, 2013, 3:40 PM–3:50 PM
Break

MONDAY, APRIL 29, 2013, 3:50 PM–5:30 PM
Track 5, Session 2: Regulatory Topics

Organizers: Daniel Bullen (DNFSB), Barry Butterfield (HDR Eng)
Chair: Barry Butterfield (HDR Eng)

Pecos
3:50 p.m.
Abraham Van Luik (DOE)

4:15 p.m.
(6901) Initial Review of a License Application for a Spent Nuclear Fuel Repository in Sweden
Björn Dverstorp, Bo Strömberg (Swedish Radiation Safety Authority (SSM))

4:40 p.m.
(6890) The Finnish Regulatory Experience in the Construction of ÖNKALO
Jussi Heinonen, Kai Hämäläinen, Risto Paltemaa (STUK)

Track 2, Session 2: Natural Systems for Disposal (Generic and Site-Specific)

Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)
Chair: Irina Gaus (NAGRA)

Las Cruces
3:50 p.m.
(6836) Iodide Uptake onto Clay Minerals and the Relationship to Fixed Charge
Andrew Miller, Jessica Kruchak, Melissa Mills, Hernesto Tellez, Yifeng Wang (SNL)

4:15 p.m.
(6837) Relationship Between Water Flux and Hydraulic Gradient for Clay Formations
Hui-Hai Liu, Jens Birkholzer (LLNL)

4:40 p.m.
(6850) Modeling Swelling and Swelling Pressure in Expansive Clays
G. Ofogebu, B. Dasgupta, C. Manepally, H. Başağaoğlu (CNWRA), R. Fedors (NRC)

5:05 p.m.
(6976) A Demonstration of the Disposal Systems Evaluation Framework (DSEF)
Harris R. Greenberg, James A. Blink, Mark Sutton, Montu Sharma (LLNL)

Track 3, Session 2: Engineered Systems for Disposal

Organizers: Frank Garisto (NWMO), Asdul Chowdhury (CNWRA), David Pickett (CNWRA)
Chair: George Danko (Univ of Nevada-Reno)

Carlsbad
3:50 p.m.
(6976) A Demonstration of the Disposal Systems Evaluation Framework (DSEF)
Harris R. Greenberg, James A. Blink, Mark Sutton, Montu Sharma (LLNL)

4:15 p.m.
(6806) FIRST-Nuclides: European Project on Radionuclide Release from Spent Fuel
Bernhard Kienzler, Ernesto González-Robles, Volker Metz (KIT), Alba Valls, Lara Duro (Amphos 21)

4:40 p.m.
(6859) The Manufacturing of a Disposal Canister Using a Cold Spray Coating of Copper
Minsoo Lee, Heui Joo Choi, Jong Youl Lee, Jong Won Choi (KAERI)

5:05 p.m.
(6863) Design Code Application and Preliminary Structural Evaluation of a Used Fuel Containe
Chris Boyle (NWMO)

Track 9, Session 1: High-Level Radioactive Waste Transportation

Organizer: Ruth Weiner (SNL)

Grand Salon C/D
3:50 p.m.
Spent Fuel Transportation on Risk Assessment–Panel
The U. S. Nuclear Regulatory Commission (NRC) is responsible for promulgating regulations for the packaging of spent fuel (and other large quantities of radioactive material) for transport that provide for public health and safety during transport. In 1977 the NRC published NUREG-0170, an assessment of the adequacy of those regulations to provide
the assurance of safety. In that assessment, the measure of safety was risk of radiation doses to the public under routine and accident transport conditions, and the risk was found to be acceptable. The panel will present the results of the most recent investigation into the safety of spent nuclear fuel transportation. This investigation shows the risk from the radiation emitted from the casks to be a small fraction of that from naturally occurring background radiation and the risk from accidental release of radioactive material to be several orders of magnitude less. The calculated dose due to the external radiation from the cask under routine transport conditions is similar to that found in earlier studies. The improved analysis tools and techniques, improved data availability, and reduction in the number of conservative assumptions has made the estimate of accident risk from the release of radioactive material in this study approximately five orders of magnitude less than was estimated in NUREG-0170. The results demonstrate that the regulations of the NRC continue to provide adequate protection of public health and safety during the transportation of spent nuclear fuel.

Panelists:
- John Cook (NRC)
- Douglas Ammerman (SNL)
- Ruth Weiner (SNL)
- Carlos Lopez (SNL)
- Victor Figueroa (SNL)

MONDAY, APRIL 29, 2013, 7:00 PM–9:00 PM
Opening Reception
Grand Salon E
Technical Sessions

Track 2, Session 3: Natural Systems for Disposal (Generic and Site-Specific)
Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)
Chair: John Walton (UTEP)
Grand Salon C/D
10:30 a.m.
(6864) Modeling of Induced Damage and Plastic Deformation in Granite
Liang Chen, Chunping Wang (BRIUG), Jianfeng Liu (Sichuan Univ), Xiyong Wang, Ju Wang (BRIUG), Jianfu Shao (Univ of Lille)
10:55 a.m.
(6877) Integrated-Tool Development for Evaluation of Radionuclide Transport in the Far-Field of High-Level Radioactive Waste Repositories
Teklu Hadgu, Yifeng Wang (SNL)

Track 7, Session 5: Storage of Used Nuclear Fuel and High Level Waste
Organizers: Brady Hanson (PNNL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Brady Hanson (PNNL)
Carlsbad
10:30 a.m.
(6925) Criticality Safety for Plutonium-Filled Canister in a Repository
Elsa Lemaitre-Xavier, Joohong Ahn (Univ of California, Berkeley)
10:55 a.m.
(6962) Observation and Mechanism of Hydride in Zircaloy-4 Re-Orientation Induced by High Pressure at High Temperatures
Y. Yan, A. Blackwell, L. Plummer, B. Radhakrishnan, S. Gorti, K. Clarino (ORNL)

Track 3, Session 3: Engineered Systems for Disposal
Organizers: Frank Garisto (NWMO), Asdul Chowdhury (CNWRA), David Pickett (CNWRA)
Chair: William Halsey (LLNL)
Grand Salon G/H
10:30 a.m.
(6887) Using Copper Coatings for Corrosion Protection of a Used Fuel Container During Geological Storage
Peter G. Keech (NWMO)
10:55 a.m.
(6893) Alteration of Clinoptilolite into High-Silica Analcime Within a Bentonite Barrier System Under Used Nuclear Fuel Repository Conditions
M. C. Cheshire, F. A. Caporuscio (LANL), C. Jové-Colon (SNL), M. K. McCarney (Univ of Wyoming)

Track 2, Session 3: Engineered Systems for Disposal (Generic and Site-Specific)
Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)
Chair: John Walton (UTEP)
Grand Salon C/D
10:30 a.m.
(6864) Modeling of Induced Damage and Plastic Deformation in Granite
Liang Chen, Chunping Wang (BRIUG), Jianfeng Liu (Sichuan Univ), Xiyong Wang, Ju Wang (BRIUG), Jianfu Shao (Univ of Lille)
10:55 a.m.
(6877) Integrated-Tool Development for Evaluation of Radionuclide Transport in the Far-Field of High-Level Radioactive Waste Repositories
Teklu Hadgu, Yifeng Wang (SNL)

Track 7, Session 4: Storage of Used Nuclear Fuel and High Level Waste
Organizers: Brady Hanson (PNNL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Robert Einziger (NRC)
Grand Salon I/J
10:30 a.m.
(6925) Criticality Safety for Plutonium-Filled Canister in a Repository
Elsa Lemaitre-Xavier, Joohong Ahn (Univ of California, Berkeley)
10:55 a.m.
(6962) Observation and Mechanism of Hydride in Zircaloy-4 Re-Orientation Induced by High Pressure at High Temperatures
Y. Yan, A. Blackwell, L. Plummer, B. Radhakrishnan, S. Gorti, K. Clarino (ORNL)

Track 7, Session 5: Storage of Used Nuclear Fuel and High Level Waste
Organizers: Brady Hanson (PNNL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Brady Hanson (PNNL)
Carlsbad
10:30 a.m.
(6925) Criticality Safety for Plutonium-Filled Canister in a Repository
Elsa Lemaitre-Xavier, Joohong Ahn (Univ of California, Berkeley)
10:55 a.m.
(6962) Observation and Mechanism of Hydride in Zircaloy-4 Re-Orientation Induced by High Pressure at High Temperatures
Y. Yan, A. Blackwell, L. Plummer, B. Radhakrishnan, S. Gorti, K. Clarino (ORNL)

Track 7, Session 5: Storage of Used Nuclear Fuel and High Level Waste
Organizers: Brady Hanson (PNNL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Brady Hanson (PNNL)
Carlsbad
10:30 a.m.
(6925) Criticality Safety for Plutonium-Filled Canister in a Repository
Elsa Lemaitre-Xavier, Joohong Ahn (Univ of California, Berkeley)
10:55 a.m.
(6962) Observation and Mechanism of Hydride in Zircaloy-4 Re-Orientation Induced by High Pressure at High Temperatures
Y. Yan, A. Blackwell, L. Plummer, B. Radhakrishnan, S. Gorti, K. Clarino (ORNL)

Track 3, Session 3: Engineered Systems for Disposal
Organizers: Frank Garisto (NWMO), Asdul Chowdhury (CNWRA), David Pickett (CNWRA)
Chair: William Halsey (LLNL)
Grand Salon G/H
10:30 a.m.
(6887) Using Copper Coatings for Corrosion Protection of a Used Fuel Container During Geological Storage
Peter G. Keech (NWMO)
10:55 a.m.
(6893) Alteration of Clinoptilolite into High-Silica Analcime Within a Bentonite Barrier System Under Used Nuclear Fuel Repository Conditions
M. C. Cheshire, F. A. Caporuscio (LANL), C. Jové-Colon (SNL), M. K. McCarney (Univ of Wyoming)

Track 2, Session 3: Natural Systems for Disposal (Generic and Site-Specific)
Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)
Chair: John Walton (UTEP)
Grand Salon C/D
10:30 a.m.
(6864) Modeling of Induced Damage and Plastic Deformation in Granite
Liang Chen, Chunping Wang (BRIUG), Jianfeng Liu (Sichuan Univ), Xiyong Wang, Ju Wang (BRIUG), Jianfu Shao (Univ of Lille)
10:55 a.m.
(6877) Integrated-Tool Development for Evaluation of Radionuclide Transport in the Far-Field of High-Level Radioactive Waste Repositories
Teklu Hadgu, Yifeng Wang (SNL)
Technical Sessions

Cochairs: Matt Kozak (Intera, Inc.), E. Kremer (NWMO)

Cimarron
1:30 p.m.
(6880) Reference Case for Generic Disposal of HLW and SNF in Salt
Palmer Vaughn, S. David Sevougian, Ernest L. Hardin, Paul Mariner, Michael B. Gross (SNL)
1:55 p.m.
(6905) New Transport Modeling Approach for the Groundwater Pathway in PA Models
Bruce A. Robinson, Shaoping Chu (LANL)
2:20 p.m.
(6935) Development of Complex Scenarios for a Safety Case Development
Jongtae Jeong, Jung-Woo Kim, Youn-Myoung Lee, Dong-Keun Cho, Chul-Hyung Kang (KAERI)
2:45 p.m.

Track 2, Session 4: Natural Systems for Disposal (Generic and Site-Specific)

Cochairs: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)
Chair: Scott Painter (LANL)

Las Cruces
1:30 p.m.
(6906) Experimental Evaluation of Actinide Transport in a Fractured Granodiorite
Timothy M. Dittrich, Paul W. Reimus (LANL)
1:55 p.m.
(6928) Thermal-Hydrologic Modeling of a Deep Borehole Disposal System
Bill W. Arnold, Teklu Hadgu (SNL)
2:20 p.m.
(6941) Mesoscale Modeling of Brine Processes in a Single Salt Crystal
Qinjun Kang, Bruce Robinson (LANL), Li Chen (LANL/Xian jiaotong Univ)
2:45 p.m.
(6932) A Thermodynamic Model for Na-Mg-B(OH)\textsubscript{2}-HCO\textsubscript{3}-CO\textsubscript{3}-Cl-SO\textsubscript{4} System to High Ionic Strengths
Yongliang Xiong (SNL)

Track 3, Session 4: Engineered Systems for Disposal

Organizers: Frank Garisto (NWMO), Axl Chowdhury (CNWRA), David Pickett (CNWRA)
Chair: Emory Collins (ORNL)

Santa Fe
1:30 p.m.
(6947) Repository Criticality Analysis for Damaged Fuels: Geometry Effect in the Modeling of Uranium and Plutonium Deposition in Geological Formations
Xudong Liu, Joonhong Ahn (Univ of California, Berkeley), Fumio Hirano (JAEA)
1:55 p.m.
(6960) Anoxic Corrosion of Steel and Lead in Na-Cl±Mg Dominated Brines
Gregory T. Roselle (SNL)
2:20 p.m.
(6987) Integrating Used Fuel Degradation Models into Generic Performance Assessment
David C. Sassani, Carlos F. Jové Colón, Philippe F. Weck (SNL)

Track 4, Session 4: Institutional Topics (With Emphasis on Lessons Learned)

Organizers: Charles McCombie (MCM Consulting)
Cochairs: Dan Bullen (DNFSB), Charles McCombie (MCM Consulting)

Pecos
1:30 p.m.
(6936) National Programmes and Implementation of EU Nuclear Waste Directive
Gunnar Buckau [European Commission (JRC-ITU)]
1:55 p.m.
(7000) Overview of the United States Department of Energy’s Used Fuel Disposition Research and Development Campaign
Peter N. Swift (SNL), Jens T. Birckholzer (BNL), William J. Boyle, Timothy C. Gunter, Ned B. Larson (DOE), Robert J. MacKinnon, Kevin A. McMahon (SNL), W. Mark Nutt (ANL), Ken B. Sorenson (SNL)
2:20 p.m.
Charles Forsberg (MIT)
2:45 p.m.
### Track 8, Session 2: Advanced Fuel Cycles: Impacts on Waste Management

**Organizers:** Joohong Ahn (Univ of California, Berkeley), Jongwon Choi (KAERI)  
**Chair:** Max Fratoni (Penn State Univ)

#### Acoma 1:30 p.m.

<table>
<thead>
<tr>
<th>Presentation Title</th>
<th>Speaker(s)</th>
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</thead>
<tbody>
<tr>
<td>(6869) A Blueprint for the New Used Fuel Management Organization</td>
<td>Steve Nesbit (Duke Energy), Lake Barrett (L. Barrett Consulting), Rod McCullum (NEI), Dan Stout (TVA)</td>
</tr>
</tbody>
</table>

#### (6843) The Concentration and Distribution of Beryllium in Hanford High-Level Waste  
Jacob G. Reynolds (Washington River Protection Solutions, LLC)

#### (6856) Partitioning and Durable Waste Forms for Highly Radiotoxic Isotopes  
Bruce E. Kirstein, Sue B. Clark (NWTRB)

#### (6870) Evaluation of High-Level Melter Feed at Hanford  
Jeremy Belsher, Amy Ramsey, William Ramsey (Washington River Protection Solutions, LLC)

#### (6924) Inorganic Metal Fluorite Materials as Novel Adsorbents for Gaseous Radioiodine Capture  
Yifeng Wang, Andy Miller (SNL)

### TUESDAY, APRIL 30, 2013, 3:10 PM–3:30 PM

**Break**

### TUESDAY, APRIL 30, 2013, 3:30 PM–5:10 PM

#### Track 1, Session 3: Total Repository System (Generic and Site-Specific)

**Organizers:** Peter Swift (SNL), Matt Kozak (Intera, Inc.), George Danko (Univ. of Nevada, Reno)  
**Cochairs:** D. Sevougian (SNL), G. Freeze (SNL)

#### Grand Salon C/D

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation Title</th>
<th>Speaker(s)</th>
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</thead>
<tbody>
<tr>
<td>3:30 p.m.</td>
<td>Leveraging Existing Process Modeling Capability in Geosphere Performance Assessments</td>
<td>Dylan R. Harp, Scott L. Painter (LANL)</td>
</tr>
<tr>
<td>3:55 p.m.</td>
<td>Repository Performance Insights from Simplified Generic Safety Assessment Models</td>
<td>Geoff Freeze, Peter Swift, Palmer Vaughn (SNL)</td>
</tr>
<tr>
<td>4:20 p.m.</td>
<td>Fourth Case Study: Postclosure Safety Assessment of a Used Fuel Repository in Crystalline Rock</td>
<td>E. P. Kremer, N. G. Hunt (NWMO), J. D. Avis (Geoferma Engineering ILtd), T. Chshyolikova (AECL), F. Garisto, P. Gierszewski, M. Gobien (NWMO), C. I. Kitson (AECL), C. L. D. Medri (NWMO), T. W. Melnyk, L. C. Wojciechowski (AECL)</td>
</tr>
</tbody>
</table>

#### (7013) Phase Field Simulations of Hydride Reorientation in Zircalloys  
B. Radhakrishnan, S. B. Gorti, K. Clarno, Y. Yan (ORNL)

#### (7016) Impact of Atmospherically Deposited Salts on the Localized Corrosion Performance of Materials Used for the Interim Storage of Used Nuclear Fuel  
David G. Enos, Charles R. Bryan (SNL)

#### (7032) Low Temperature Creep of Used Nuclear Fuel During Long Term Dry Storage  
Carl E. Beyer (PNNL), James S. Tulenko, Yong Yang, Gerhard E. Fuchs (Univ of Florida), James Stubbin (Univ of Illinois), Jacob Eapen, Korukonda Murty (NCSU)

#### (7037) Simulation of Hyride Reorientation in Zr-Based Claddings During Dry Storage  
Veena Tikare (SNL)

### Track 2, Session 5: Natural Systems for Disposal (Generic and Site-Specific)

**Organizers:** Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)  
**Chair:** Budhi Sagar (Consultant)

#### Carlsbad 3:30 p.m.

<table>
<thead>
<tr>
<th>Presentation Title</th>
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<tbody>
<tr>
<td>(6943) Modeling of Fate and Transport of Water in a Salt-Based Repository</td>
<td>Philip Stauffer, Dylan Harp, Bruce Robinson (LANL)</td>
</tr>
<tr>
<td>(6949) Hydrological and Hydrochemical Studies in KAERI Underground Research Tunnel, Korea</td>
<td>Yong-Kwon Koh, Jang-Soon Kwon, Geon-Young Kim, Jong-Won Choi (KAERI)</td>
</tr>
</tbody>
</table>

#### (7031) Simulation of Hydride Reorientation in Zr-Based Claddings During Dry Storage  
Veena Tikare (SNL)

### Track 3, Session 5: Engineered Systems for Disposal

**Organizers:** Frank Garisto (NWMO), Asdul Chowdhury (CNWRA), David Pickett (CNWRA)  
**Chair:** Charles Forberg (MIT)

#### Cimarron 3:30 p.m.

<table>
<thead>
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<tr>
<td>(6977) Leveraging Existing Process Modeling Capability in Geosphere Performance Assessments</td>
<td>Dylan R. Harp, Scott L. Painter (LANL)</td>
</tr>
<tr>
<td>(7004) Repository Performance Insights from Simplified Generic Safety Assessment Models</td>
<td>Geoff Freeze, Peter Swift, Palmer Vaughn (SNL)</td>
</tr>
<tr>
<td>(7004) Fourth Case Study: Postclosure Safety Assessment of a Used Fuel Repository in Crystalline Rock</td>
<td>E. P. Kremer, N. G. Hunt (NWMO), J. D. Avis (Geoferma Engineering ILtd), T. Chshyolikova (AECL), F. Garisto, P. Gierszewski, M. Gobien (NWMO), C. I. Kitson (AECL), C. L. D. Medri (NWMO), T. W. Melnyk, L. C. Wojciechowski (AECL)</td>
</tr>
</tbody>
</table>
(6955) Electrochemical Modeling and Experimental Study of Used Fuel Matrix Degradation
James L. Jerden, Jr., Kurt E. Frey, Terry A. Cruse, William L. Ebert (ANL)
3:55 p.m.

(6991) Spectroscopic Detection of Hydrogen Peroxide Generated by Alpha Radiolysis in Solution
4:20 p.m.

(6926) Spent Nuclear Fuel and its Corrosion Products: A Quantum-Mechanical Modeling Investigation
Philippe F. Weck (SNL), Eunja Kim (UNLV), Carlos Jové-Colón, David C. Sassani (SNL)
4:45 p.m.

(6997) Formation of Studite during the Oxidative Dissolution of Doped UO2 by Hydrogen Peroxide: Effect of Dopant Chemistry
Edgar Buck, Andrew Casella, Rick Wittman, Lanee Snow, Bruce McNamara, Frannie Smith (PNNL)

Track 8, Session 3: Advanced Fuel Cycles: Impacts on Waste Management

Organizers: Joonhong Ahn (Univ of California, Berkeley), Jongwon Choi (KAERI)
Chair: Jim Blink (LLNL)
Grand Salon G/H

Track 8, Session 3: Advanced Fuel Cycles: Impacts on Waste Management

Organizers: Joonhong Ahn (Univ of California, Berkeley), Jongwon Choi (KAERI)
Chair: Jim Blink (LLNL)
Grand Salon G/H

WEDNESDAY, MAY 1, 2013, 3:30 PM–4:55 PM
Track 4: Total Repository System (Generic and Site-Specific)

Organizers: Peter Swift (SNL), Matt Kozak (Intera, Inc.), George Danko (Univ. of Nevada, Reno)
Co-chairs: Erik Kremer (NWMO), Peter Swift (SNL)
Grand Salon A/B

10:30 a.m.

(6805) Preliminary Safety Analysis Gorleben: Source Terms for Heat-Producing Wastes
Bernhard Kienzler, Marcus Altmäier, Christiane Bube, Volker Metz (KIT)
10:55 a.m.

(6821) Sensitivity Analysis of Probabilistic Dose Results in SKB’s License Application
Allan Hedin (SKB)

Track 2, Session 6: Natural Systems for Disposal (Generic and Site-Specific)

Organizers: Jude McMurry (CWNRA), Stratis Vomvoris (NAGRA)
Co-chairs: Björn Dverstorp (SSM), John Walton (UETP)
Cimarron

10:30 a.m.

(6956) THM Processes Modeling to Evaluate Salt-Based Repositories in the Long-Term
Laura Blanco Martin, Jonny Rutqvist, James Houseworth, Jens Birkholzer (LBNL)
10:55 a.m.

(6944) Development and Verification of a New Particle Tracking Capability for Modeling Radionuclide Transport in Discrete Fracture Networks
Natalia Makedonska, Scott Painter, Tsung-Lin Hsieh, Quan Bui, Carl Cable (LBNL)
11:20 a.m.

(6982) Chemical-Mechanical Coupling Related to THMC Modelling of Clay Formations
11:45 a.m.

Track 7, Session 8: Storage of Used Nuclear Fuel and High Level Waste

Organizers: Brady Hanson (PNNL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Dietmar Wolff (BAM)
Grand Salon G/H

10:30 a.m.

(7034) Study on the Delayed Hydride Cracking for Used Nuclear Fuel Cladding in Dry Storage
Dallas Burton, Yong Yang (Univ of Florida)
Technical Sessions

Track 3, Session 6: Engineered Systems for Disposal
Organizers: Frank Garisto (NWMO), Asdul Chowdhury (CNWRA), David Pickett (CNWRA)
Chair: Matt Kozak (Interna, Inc.)
Grand Salon I/J

10:30 a.m.
(6998) Modelling the Interactions of Radiolytic Species with Noble Metal Particles
Alexander Geanes, Frances Smith, Donghai Mei, Edgar Buck (PNNL)
10:55 a.m.
(7003) Onset and Stability of Natural Convection in Deep Boreholes
E. A. Bates, E. Baglietto, M. J. Driscoll, J. Buongiorno (MIT)
11:20 a.m.
(6909) ADVANTG Shielding Analysis for Closure Operations in an Open-Mode Repository
Aaron M. Bevill, Georgeta Radulescu, John M. Scaglione, Rob L. Howard (ORNL)

Track 4, Session 7: Natural Systems for Disposal (Generic and Site-Specific)
Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)
Chair: Stratis Vomvoris (NAGRA)
Grand Salon I/J

1:30 p.m.
(6945) Disposal of Heat-Generating Nuclear Waste in Salt—Recent Activities and Future Plans
Bruce A. Robinson (LANL), Roger A. Nelson (DOE), Douglas J. Weaver (LANL)
1:55 p.m.
Felicia A Durán, Gregory D. Wyss (SNL), Scott DeMuth (LANL), James A. Blink (LLNL)

Track 1, Session 5: Total Repository System (Generic and Site-Specific)
Organizers: Peter Swift (SNL), Matt Kozak (Interna, Inc.), George Danko (Univ. of Nevada, Reno)
Co-chairs: G. Freeze (SNL), D. Sevougian (SNL)
Cimarron

1:30 p.m.
(6847) Are Fast Reactors Necessary for Full Actinide Recycle?
E. D. Collins, C. W. Alexander, G.D. Del Cul (ORNL), J. P. Renier (ORNL (Ret.))
1:55 p.m.
(6857) Two-Dimensional CFD Simulations of a Square 8x8 Heater Rod Array in an Isothermal Enclosure Filled with Rarified Air Miles Greiner, Pablo Araya, N. R. Chalasani (Univ of Nevada, Reno), Jie Li, Yung Liu (ANL)
2:20 p.m.
(6895) The Effect of Weld Residual Stress on Life Prediction of Used Fuel Storage Canister Material
B. P. Black, R. G. Ballinger, S. E. Ferry (MIT), S. Teysseyre (INL)
2:45 p.m.

10:55 a.m.
(7038) Interim Storage Environment: Considerations for Corrosion Testing of SNF Dry Storage Containers
Charles R. Bryan, David Enos (SNL)
11:20 a.m.
(7024) Development of a Comprehensive Health Monitoring System for Dry Storage of Spent Nuclear Fuel
Michael Hurley, Brian Jaques, Vikram Patel (Boise State Univ), Jack Ma, Jake Blanchard, Hongyi Mi, Kumar Sridharan (Univ of Wisconsin), Sean McDevitt (Texas A&M), Sin Loo, Darryl Butt (Boise State Univ)

Track 2, Session 7: Natural Systems for Disposal (Generic and Site-Specific)
Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)
Chair: Stratis Vomvoris (NAGRA)
Grand Salon I/J

10:30 a.m.
(6702) Why We Can’t Predict Future Fuel Cycles: Implications for Waste Management and Repository Design
Charles Forsberg (MIT)
10:55 a.m.
(6845) Impacts Associated with Early Transfer of Spent Fuel to Dry Storage
Eileen Supko (Energy Resources International, Inc.), Keith Waldrop (EPRI)
1:30 p.m.
(6875) The Effect of Weld Residual Stress on Life Prediction of Used Fuel Storage Canister Material
B. P. Black, R. G. Ballinger, S. E. Ferry (MIT), S. Teysseyre (INL)

Track 3, Session 5: Storage of Used Nuclear Fuel and High Level Waste
Organizers: Brady Hanson (PNNL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Holger Voelzke (BAM)
Grand Salon G/H

1:30 p.m.
(6895) The Effect of Weld Residual Stress on Life Prediction of Used Fuel Storage Canister Material
B. P. Black, R. G. Ballinger, S. E. Ferry (MIT), S. Teysseyre (INL)
Technical Sessions

(6912) Assessment of Available Techniques for the Interim Storage of AGR Fuel
Laura McManniman (Sellafield Limited)

Track 3, Session 7: Engineered Systems for Disposal
Organizers: Frank Garisto (NWMO), Asdul Chowdhury (CNWRA), David Pickett (CNWRA)
Chair: Dan Bullen (DNFSB)
Carlsbad
1:30 p.m.
(6846) Modelling Container Failure in a Canadian Deep Geologic Repository
Mark Gobien, Frank Garisto (NWMO)
1:55 p.m.
(6896) Sorption of Neptunium on Graphite under Potential Repository Conditions
C. Keith, M. Kalagorgevich, R. Springs, G. C. S. Cerfice (UNLV)
2:20 p.m.
(6921) Effects of Chemical Solution Conditions on Uranium(VI) Diffusion in Clays
Ruth M. Tinnacher, James A. Davis (LBNL)
2:45 p.m.
(7029) Coupled THMC Ventilation Model Tasks for Integrated, High-Capacity SNF Management
George Danko, Davood Bahrami (Univ. of Nevada, Reno)

Track 6, Session 2: Institutional Topics (With Emphasis on Lessons Learned)
Organizer: Charles McCombie (MCM Consulting)
Co-chairs: Mick Apted (Intera, Inc), Ray Clark (EPA)
Grand Salon D
1:30 p.m.
(6842) The Technical Stability of the Swedish Nuclear Fuel Safety Program
Thomas Kaiserfeld (Lund Univ)
1:55 p.m.
(6897) Planning an Integrated Waste Management Strategy for New Nuclear Nations
Charles McCombie, Neil Chapman, Wolfgang Kickmaier, Ellie Scourse (MCM Consulting)
2:20 p.m.
(6898) Progress with Multinational Disposal Initiatives
Charles McCombie, Neil Chapman (Arius Association), Ewoud Verhoef (COVRA)
2:45 p.m.
(6874) Technology Transfer—Identification and Quantification of Potential Benefits
Kjell Westerberg (SKB International AB)

Track 8, Session 5: Advanced Fuel Cycles: Impacts on Waste Management
Organizers: Joonhong Ahn (Univ. of California, Berkeley), Jongwon Choi (KAERI)
Chair: Charles Forsberg (MIT)
Las Cruces
1:30 p.m.
(6952) Feasibility Analyses for Electrocoring Waste Disposal in Salt
Joon Lee, Yifeng Wang (SNL), Michael Simpson (INL), Andy Miller (SNL)
1:55 p.m.
(6958) THM Coupling Analysis of Korea Research Teams for Task B of the International Coorporation Project, DECOVALEX
Changsoo Lee (KAERI), Sangki Kwon (Inha Univ), Won-Jin Cho, Heui-Joo Choi, Jong-Won Choi (KAERI)

WEDNESDAY, MAY 1, 2013, 3:10 PM–3:30 PM
Break

WEDNESDAY, MAY 1, 2013, 3:30 PM–5:10 PM
Track 1, Session 6: Total Repository System (Generic and Site-Specific)
Organizers: Peter Swift (SNL), Matt Kozak (Intera, Inc), George Danko (Univ. of Nevada, Reno)
Co-chairs: O. Pensado (CNWRA), M. Kozak (Intera, Inc.)
Grand Salon A/B
3:30 p.m.
(6950) Independent Modelling in SSM’s Licensing Review
Shulan Xu, Bjorn Dverstorp, Maria Norden (Swedish Radiation Safety Authority)
3:55 p.m.
(6966) Wireless Data Transmission from Deep Geological Disposal Facilities to the Surface
Thomas J. Schröder, Ecaterina Rosca-Bocancea, Jaap Hart (NRG)

Track 3, Session 8: Engineered Systems for Disposal
Organizers: Frank Garisto (NWMO), Asdul Chowdhury (CNWRA), David Pickett (CNWRA)
Chair: Abe van Luik (DOE)
Acema
3:30 p.m.
(7007) Using the Disposal Systems Evaluation Framework to Evaluate Design Tradeoffs
Harris R. Greenberg, James A. Blink, Montu Sharma (LLNL)
3:55 p.m.
(7022) SNF Disposal Concepts for Small and Large Waste Packages
Ernest Hardin, Teklu Hadgu, Dan Clayton (SNL), Rob Howard (ORNL), Harris Greenberg, Jim Blink, Montu Sharma, Mark Sutton (LLNL), Joe Carter, Mark Dupont, Philip Rodwell (SRNL)
4:20 p.m.
(6796) Diffusion of Cesium in Compacted Bentonite with Different Column Lengths
Chuan-Pin Lee, Ming-Chee Wu (National Cheng Kung Univ), Ching-Yuan Liu (National Central Univ), Chun-Hua Pan (National Cheng Kung Univ), Tsuey-Lin Tsai, Hwa-Jou Wei, Lee-Chung Men (Inst of Nuclear Energy Research)
4:45 a.m.
(6862) Modeling of Cylindrical Casks under Horizontal Drop Test Conditions
Uwe Zencker, Linan Qiao, Eva-Maria Kasparek, Holger Völzke (BAM Federal Inst for Materials Research and Testing)

Track 6, Session 3: Institutional Topics (With Emphasis on Lessons Learned)
Organizer: Charles McCombie (MCM Consulting)
Cochairs: Ray Clark (EPA), Charles McCombie (MCM Consulting)

Cimarron

3:30 p.m.
(6841) Cigéo, the French Geological Repository Project
T. Labalette, A. Harman, M. C. Dupuis, G. Ouzounian (ANDRA)
3:55 p.m.
(6844) URLs in European Programs for High Level Waste Disposal—How Used?
Kimitaka Yoshimura (NUMO), Irina Gaus (NAGRA), Kenichi Kaku (NUMO), Stratis Vomvoris (NAGRA)
4:20 p.m.
(6933) Geological Disposal and Site Selection in Switzerland—Accomplishments and Outlook
Thomas Ernst, Efstratios (Stratis) Vomvoris, Anne Claudel (NAGRA)

Track 7, Session 11: Storage of Used Nuclear Fuel and High Level Waste
Organizers: Brady Hanson (PNNL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Ken Sorenson (SNL)

Grand Salon C/D

3:30 p.m.
(6838) Logistical Simulation of Spent Nuclear Fuel Disposal in a Salt Repository with Low Temperature Limits
E. A. Kalinina, E. L. Hardin (SNL)
3:55 p.m.
(6851) Integrated Modeling of Spent Nuclear Fuel Management Stages
Osvaldo Pensado, Sitakanta Mohanty (CNWRA), Keith Compton (NRC), E. Lynn Tipton, Razvan Nes, Patrick LaPlante (CNWRA)
4:20 p.m.
(6861) An Auxiliary System to Monitor the Key Environmental Variables in Spent Fuel Pool at the Loss of Power Accident
Chan Hee Park, Jung Min Lee, Arim Lee, Joo Hyun Moon (Dongguk Univ), Wook Jae Yoo, Bong Soo Lee (Kookuk Univ), Sung Kyu Shin (Korea Radioactive Waste Management Corp)
4:45 p.m.
(6866) Thermal Modeling Studies for Active Storage Modules in the Calvert Cliffs ISFSI
Harold E. Adkins, Jr., James A. Fort, Sarah R. Suffield, Judith M. Cuta, Brian A. Collins (PNNL)

THURSDAY, MAY 2, 2013, 8:00 AM–9:15 AM
Panel Discussion—IV: Large-Volume Wastes from Accident Cleanups
Organizer: Charles Forsberg (MIT)
Chair: Charles Forsberg (MIT)
Grand Salon F

Waste management systems are designed for process wastes produced at a relatively uniform rate, not the quantities of wastes generated by a major accident. As a consequence waste disposal limits the rate of cleanup after an accident. The panel will address key post-accident waste disposal issues including: Is there a risk-based strategy that is practical and politically viable? How should one classify wastes in a post-accident environment? Are new disposal technologies (such as seabed disposal) required?

Panelists:
- Charles Forsberg (MIT)
- Thomas Cotton (Complex Systems Group, LLC)
- Kaname Miyahara (JAEA)
- John Kessler (EPRI)

THURSDAY, MAY 2, 2013, 9:15 AM–11:00 AM
Plenary—V: Consent-Based Nuclear Facility Siting
Organizer: Hank Jenkins-Smith (Univ of Oklahoma)
Chair: Barry Butterfield (HDR Eng)
Grand Salon F

9:15 a.m.
(7185) Familiarity as Key to Public Acceptance of Used Nuclear Fuel Facilities
Ann Bisconti (Bisconti Research, Inc.)
9:40 a.m.
(7186) Consent-Based Siting: What We Have Learned
Daniel Metlay (U.S. Nuclear Waste Technical Review Board)
10:05 a.m.
(7229) Department of Energy Consent-Based Siting Approach
Jeff Williams (DOE)
10:30 a.m.
(7234) Siting of Radioactive Waste Disposal Facilities—A Synthesis of International Learning
Claudio Pescatore (OECD/NEA)

THURSDAY, MAY 2, 2013, 11:00 AM–11:10 AM
Break

THURSDAY, MAY 2, 2013, 11:10 AM–12:50 PM
Track 4, Session 2: Biosphere
Organizers: Andrew Sowder (EPRI)
Chair: Nava Garisto (SENES Consultants)
Grand Salon A/B

11:10 a.m.
Technical Sessions

Track 2, Session 8: Natural Systems for Disposal (Generic and Site-Specific)

Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)
Chair: Stratis Vomvoris (NAGRA)
Grand Salon C/D

11:10 a.m.
(6918) Underground Salt Research Laboratory at the Waste Isolation Pilot Plant
F. D. Hansen (SNL)
11:35 a.m.
(6919) An Overview of U.S. Disposal Research Activities Linked to International URLs
Jens Birkholzer, Daisuke Asahina, Fei Chen (LBNL), Payton Gardner (SNL), James Houseworth (LBNL), Carlos Jové-Colón (SNL), Annie Kersting (LLNL), Prasad Nair (DOE), Payton Gardner (LBNL), Mark Tynan (DOE), Yefeng Wang (SNL), Mavrik Zavarin (LLNL)
12:00 p.m.
(7071) KURT (KAERI Underground Research Tunnel) Activities for HLW Disposal Technology Development in Korea
Jongwon Choi, Kyungsu Kim (KAERI)

Track 7, Session 12: Storage of Used Nuclear Fuel and High Level Waste

Organizers: Brady Hanson (PNNL), Vincenzo Rondinella (EC-JRC-ITU)
Chair: Robert Einziger (NRC)
Carlsbad

11:10 a.m.
(7081) NUHWS Storage and Transportation of Irradiated Reactor Components and High Level Waste in Large Packages
Glen A. Rae (Transnuclear)
11:35 a.m.
(6979) Production of Simulated High-Burnup Used Fuel Cladding in the HFIR
R. H. Howard, Y. Yan, R. L. Howard, J. L. McDuffee, L. J. Ott (ORNL)
12:00 p.m.
(6983) Test System for Evaluating Spent Nuclear Fuel Bending Stiffness and Vibration Integrity
J-A. Wang, H. Wang, B. B. Bevard, R. L. Howard (ORNL), M. E. Flanagan (NRC)

THURSDAY, MAY 2, 2013, 12:50 PM–1:50 PM
Grab & Go Lunch
Grand Salon E
Technical Tour: Waste Isolation Pilot Plant (WIPP), URENCO USA uranium enrichment facilities and Waste Control Specialists radioactive and mixed waste processing and disposal company

Sponsored by Sandia National Laboratories


TRANSPORTATION: Fee includes the trip from ABQ Marriott and back to ABQ Marriott also the trips to WIPP/URENCO/ WCS and any incidental transportation while in SE New Mexico. $220.00

LODGING: Includes two nights at the Stevens Inn in Carlsbad, NM. $220.00

MEALS: Include group dinner Thursday night. $35.00 (does not include any alcoholic beverages, but there will be a cash bar available). Lunches on Friday and Saturday ($17.50 each) $35.00

TOUR-FEE: Final pricing is $510 and will include transportation, two nights hotel in Carlsbad, a group dinner, and box lunches on the days of the tours.

PARTICIPATION IS LIMITED – REGISTER EARLY!
Sandia National Laboratories (SNL) is pleased to offer and host these three tours.

1. WIPP is the Department of Energy’s facility for the deep geologic disposal of defense related transuranic wastes. The repository has been operational for 13 years and has received in excess of 10,000 shipments. In 2010 WIPP received its third 5-year certification from the US Environmental Protection Agency (EPA) in terms of meeting EPA’s long term safety criteria, and it also received it second 10-year certification from the State of New Mexico Environment Department regarding the disposal of Hazardous Waste. The WIPP repository is located in bedded rock salt ~660 m (~2,150 feet) below the surrounding Chihuahuan desert terrain. Tours will be led by project scientists and engineers directly involved with the WIPP repository and its operation. This is a unique opportunity to experience the world’s most successful operating deep geologic repository and to have direct access to the scientists and engineers with WIPP expertise. You will witness first-hand the WIPP facility, including the transportation systems, the transuranic waste handling systems, and the underground disposal environment; everything from waste receipt to emplacement underground for final disposal.

2. The URENCO USA facility began operations on June 11, 2010. Construction of the project will continue until the plant reaches the planned 5,700 tSW/a capacity. URENCO USA is the first enrichment facility to be built in the US in 30 years and the first ever using centrifuge enrichment technology. Robust project, operational, and corporate teams have been established to monitor construction activities, and to ensure training and procedural development run to schedule.

Capacity at URENCO USA currently stands at 2,000 tSW/a. It is anticipated that at full capacity the facility can produce sufficient enriched uranium for nuclear fuel to provide approximately 10% of America’s electricity needs.

3. Waste Control Specialists LLC (WCS) is a national leader in treatment, storage and disposal of radioactive, hazardous and mixed waste at its 1,338-acre west Texas facility near Andrews. With the opening of the Texas Compact Disposal Facility in April 2012, and approval for operation of its Federal Disposal Facility in September 2012, WCS is now the only facility in the United States licensed in the last 30 years to dispose of Class A, B and C low-level and mixed low-level radioactive waste. These new disposal facilities complement WCS’ existing byproduct disposal facility, the hazardous/toxic disposal facility, and the treatment facility. WCS is now a “one-stop shop” for treatment, storage and disposal of hazardous, toxic, mixed and radioactive waste needs. The company was founded in 1989 and is based in Dallas, Texas. Waste Control Specialists LLC operates as a subsidiary of Valhi, Inc

The WIPP facility is located about 40 miles from Carlsbad, New Mexico, URENCO is located near Eunice, New Mexico and WCS is located in Andrews, TX. Therefore hotel reservations will be made in Carlsbad on behalf of registered tour participants for two nights lodging and a group dinner on Thursday evening will be organized. Lodging and the dinner are both included in the participant fee.

HOW TO REGISTER:
At this time, the tour is limited to the first 25 registrants. Please indicate your interest in participating in the tour by emailing Ms. Dina Howell at vdhowel@sandia.gov no later than February 28th, 2013. Ms. Howell will send you further information with a link to the registration website, and inform you of the security requirements that apply for non-US citizens entering a federal government facility. Non-US citizens will need to fill out a form and submit it to the address given on the form, via fax or email, about 60 days prior to the tour. Full non-refundable payment for the tour will be required prior to March 15th, or the tour slot will be offered to a waiting list. Any questions, please contact Ms. Howell at vdhowel@sandia.gov or (505) 284-2780.

Payment can be most easily made through a Web-Pay URL using any major credit card. The Web-Pay application can be found at:
