

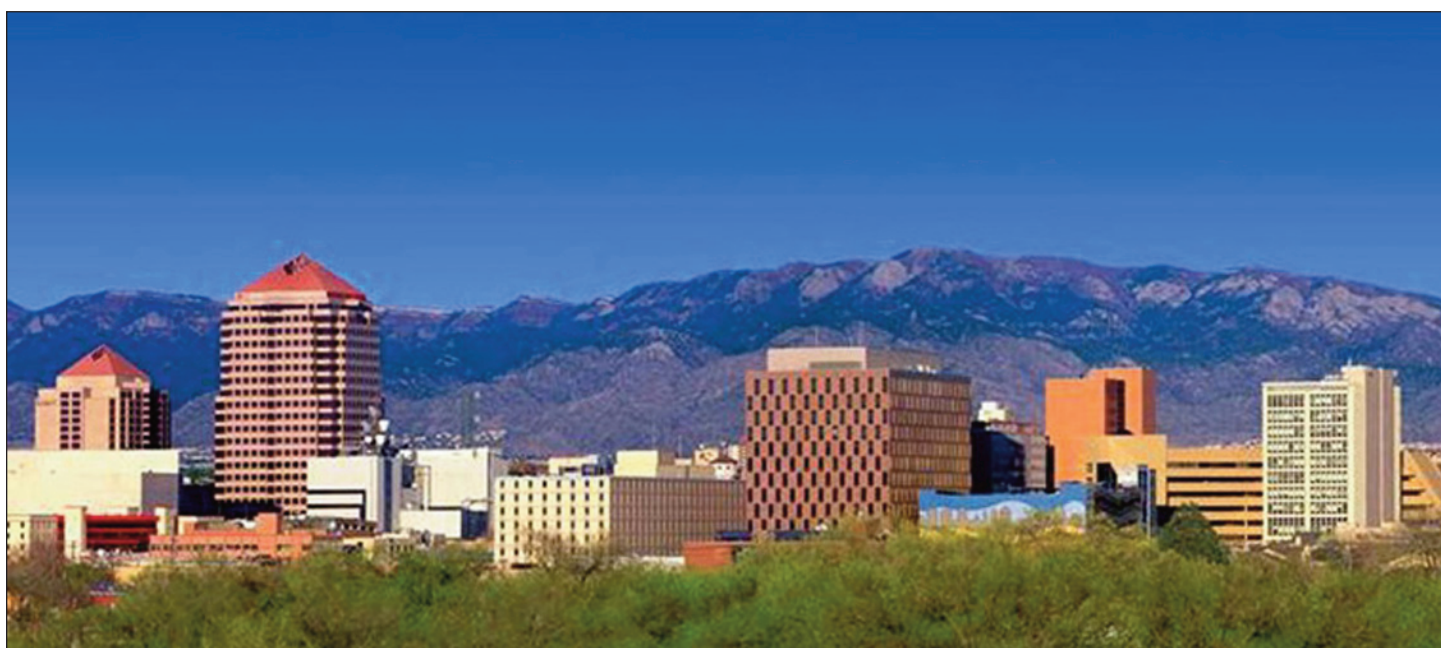


International High-Level Radioactive Waste Management Conference

April 10-14, 2011

Albuquerque, NM

Albuquerque Marriott



OFFICIAL PROGRAM

our most sincere thanks
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2011 International High-Level Radioactive Waste Management Conference:

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Thank You!

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Catch a glimpse of a listing of the sessions by day—a comprehensive list of the technical papers/presentations for the 2011 International High-Level Radioactive Waste Management Conference.
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Limited spaces will be filled on a first-come, first-serve basis.

Conference Officials



HONORARY CHAIR

Claes Thegerström

*President,
Swedish Nuclear Fuel and Waste Management Co.
(SKB), Sweden*



GENERAL CHAIR

Margaret S.Y. Chu

*Managing Director,
(Former Director of Office of Civilian Radioactive Waste
Management, USA)
M.S. Chu + Associates, LLC, USA*



TECHNICAL PROGRAM CHAIR

Sitakanta Mohanty

*Institute Engineer,
Center for Nuclear Waste Regulatory Analyses (CNWRA),
Southwest Research Institute, USA*

TECHNICAL PROGRAM AND ADVISORY COMMITTEE

Session Organizers:

Joonhong Ahn (*University of California at Berkeley (UCB), USA*)

Daniel Bullen (*Exponent Failure Analysis Associates (EFAA), USA*)

Barry Butterfield (*HDR, USA*)

Asad Chowdhury (*Center for Nuclear Waste Regulatory Analyses (CNWRA), USA*)

George Danko (*University of Nevada at Reno, USA*)

Al Aziz Eddebbarh (*Emirates Nuclear Energy Corporation (ENEC), UAE*)

Charles Forsberg (*Massachusetts Institute of Technology (MIT), USA*)

Robert Gamble (*Nye County NWRPO, USA*)

Frank Garisto (*Nuclear Waste Management Organization (NWMO), Canada*)

Brady Hanson (*Pacific Northwest National Laboratory (PNL), USA*)

Scott James (*Sandia National Laboratories (SNL), USA*)

Matt Kozak (*INTERA Inc., USA*)

Erik Kremer (*Nuclear Waste Management Organization (NWMO), Canada*)

Charles McCombie (*Arius Association, Switzerland*)

Jude McMurry (*Center for Nuclear Waste Regulatory Analyses (CNWRA), USA*)

David Pickett (*Center for Nuclear Waste Regulatory Analyses (CNWRA), USA*)

Vincenzo Rondinella (*Institute for Transuranium Elements (ITE), Germany*)

Andrew Sowder (*Electric Power Research Institute (EPRI), USA*)

Peter Swift (*Sandia National Laboratories (SNL), USA*)

Abe VanLuik (*Waste Isolation Pilot Plant (WIPP)-DOE, USA*)

Stratis Vomvoris (*National Cooperative for the Disposal of Radioactive Waste (NAGRA), Switzerland*)

Ruth Weiner (*Sandia National Laboratories (SNL), USA*)

Other committee members and advisers:

Carl Di Bella (*Nuclear Waste Technical Review Board (NWTRB), USA*)

Amanda Casella (*Pacific Northwest National Laboratory (PNL), USA*)

Ray Clark (*US Environmental Protection Agency (USEPA)*)

Leif Eriksson (*Nuclear Waste Dispositions, USA*)

Nava Garisto (*SENES, Canada*)

John Kessler (*Electric Power Research Institute (EPRI), USA*)

Kaname Miyahara (*Japan Atomic Energy Agency (JAEA), Japan*)

Stephen Turner (*SAIC, USA*)

John Walton (*University of Texas at El Paso, USA*)

Conference Officials



Peter Swift
(SNL)
Co-Lead:
Total Repository System



Matt Kozak
(INTERA, Inc.)
Co-Lead:
Total Repository System



George Danko
(UNR)
Co-Lead:
Total Repository System



Stratis Vomvoris
(Nagra)
Co-Lead:
Natural Systems



Jude McMurry
(CNWRA)
Co-Lead:
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Scott James
(SNL)
Co-Lead:
Natural Systems



David Pickett
(CNWRA)
Co-Lead:
Engineered Systems



Frank Garisto
(NWMO)
Co-Lead:
Engineered Systems



Andrew Sowder
(EPRI)
Lead:
Biosphere



Barry Butterfield
(HDR)
Co-Lead:
Regulatory Topics



Charles McCombie
(Arius)
Co-Lead:
Institutional Topics



Vincenzo Rondinella
(ITE)
Co-Lead:
Interim Storage of
High Level Waste



Brady Hanson
(PNL)
Co-Lead:
Interim Storage of
High Level Waste



Joonhong Ahn
(UCB)
Lead:
Advanced Fuel Cycles:
Impacts on Waste
Management



Ruth Weiner
(SNL)
Lead:
High-level Radioactive
Waste Transportation



Erik Kremer
(NWMO)
Co-Lead:
Security, Safeguards, and
Non-Proliferation



Abdulaziz Eddebarh
(ENEC)
Co-Lead:
Security, Safeguards, and
Non-Proliferation



Robert Richards
(SNL)
Lead:
Retrievability and
Reversibility



Charles Forsberg
(MIT)
Lead:
Fuel Cycle and Disposal
System Optimization



Amanda Casella
(PNL)
Program Committee
Member



Carl Di Bella
(NWTB)
Program Committee
Member



Leif Eriksson
(Nuclear Waste Dispositions)
Program Committee
Member



Nava Garisto
(SENES)
Program Committee
Member



Kaname Miyahara
(JAEA)
Program Committee
Member



John Walton
(Univ of Texas, El Paso)
Program Committee
Member

Not Photographed:

Daniel Bullen (EFAA), Co-Lead: Regulatory Topics; Asadul Chowdhury (CNWRA), Co-Lead: Engineered Systems; Bob Gamble (Nye County NWRPO), Co-Lead: Institutional Topics; Abe VanLuik (WIPP), Program Committee Member; Ray Clark (USEPA), Program Committee Member; John Kessler (EPRI), Program Committee Member; Stephen Turner (SAIC), Program Committee Member

Conference Information

SPONSOR

Sponsor: American Nuclear Society

Cosponsor: TMS (The Minerals, Metals & Materials Society)

Cooperation is expected from numerous professional and technical societies, national laboratories, federal agencies and commercial organizations throughout the world.

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.

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 10, 2011

1:00 PM - 4:00 PM

MONDAY, APRIL 11, 2011

7:00 AM - 7:00 PM

TUESDAY, APRIL 12, 2011

7:00 AM - 5:00 PM

WEDNESDAY, APRIL 13, 2011

7:00 AM - 5:00 PM

THURSDAY, APRIL 14, 2011

7:00 AM - 1:00 PM

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 AND PREPARATION ROOM

All speakers are required to register for the conference in advance and to submit a registration fee. A Speakers' Preparation Room, located in the Carlsbad Room of the Albuquerque Marriott Hotel, will be in operation for the duration of the conference to serve the needs of speakers and moderators. 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.

SOCIAL FUNCTIONS

OPENING RECEPTION

MONDAY, APRIL 11, 2011

7:00 PM – 9:00 PM

Location: Sandia Ballroom

Each full conference registrant will receive a ticket for the reception. Additional tickets may be purchased at the ANS registration desk for \$60.00.

CONFERENCE LUNCHEON

TUESDAY, APRIL 12, 2011

12:00 PM – 1:00 PM

Location: Sandia Ballroom

Each full conference registrant will receive a ticket for the luncheon. Additional tickets may be purchased at the ANS registration desk for \$50.00.

Mark Your Calendars!

American Nuclear Society: 2011 ANNUAL MEETING

June 26-30, 2011
Hollywood, FL
The Westin Diplomat



Preliminary Program available online!
REGISTER NOW! www.ans.org

Conference Schedule

MONDAY, APRIL 11, 2011

8:15 AM – 8:40 AM	Welcome and Opening Remarks
8:40 AM – 10:00 AM	Plenary—I
10:00 AM – 10:15 AM	Break
10:15 AM – 12:30 PM	Panel Discussions—I and II: International HLW Program Status and Lessons Learned
12:30 PM – 2:00 PM	Lunch Break
2:00 PM – 4:45 PM	Technical Sessions <ul style="list-style-type: none">• <i>Post Closure Safety Assessment</i>• <i>Engineered Barriers: Container Types and Sealing Materials</i>• <i>Modeling Geodynamic and Hydrogeologic Processes</i>• <i>Advanced Fuel Cycles: Separation Process Technology</i>• <i>Institutional Aspects of Repository Siting</i>
3:15 PM – 3:30 PM	Break
7:00 PM – 9:00 PM	Opening Reception

TUESDAY, APRIL 12, 2011

8:00 AM – 8:50 AM	Plenary Session—II
9:00 AM – 11:55 AM	Special Session: Reaching a Milestone in the Swedish Nuclear Waste Management Program—License Application for a KBS-Repository at Forsmark—Papers/Panel
9:50 AM – 10:15 AM	Break
10:15 AM – 11:55 AM	Technical Sessions <ul style="list-style-type: none">• <i>Retrievability and Reversibility</i>• <i>Technical Issues in Dry Storage</i>• <i>Modeling for Advanced Fuel Cycle Performance</i>
12:00 PM – 1:30 PM	Conference Luncheon
1:30 PM – 3:35 PM	Technical Sessions <ul style="list-style-type: none">• <i>Repository Information Management and Decision Support</i>• <i>Fuel Cycle and Disposal System Optimization</i>• <i>Natural Analogs</i>• <i>Engineered Barriers: Waste Forms</i>• <i>Transportation of High-Level Radioactive Waste</i>• <i>International Progress in Disposal Programs</i>
3:35 PM – 3:55 PM	Break
3:55 PM – 6:00 PM	Technical Sessions <ul style="list-style-type: none">• <i>Modeling Radionuclide Release and Transport</i>• <i>Licensing Process, Reviews, and Guidance</i>• <i>Coupled Processes</i>• <i>U.S. Disposal Policy Issues</i>• <i>Programmatic and Safety Evaluations for Interim Storage</i>• <i>Underground Repository Design Concepts</i>

WEDNESDAY, APRIL 13, 2011

8:00 AM – 10:20 AM	Panel Discussion: Future Direction for the U.S. High-Level Waste Program
10:20 AM – 10:45 AM	Break
10:45 AM – 12:00 PM	Technical Sessions <ul style="list-style-type: none">• <i>Sensitivity and Uncertainty Analysis Tools and Methods</i>• <i>Biosphere Description and Modeling in Support of Disposal</i>• <i>Engineered Barriers: Container Corrosion</i>• <i>Engineered Barriers: Geochemical and Nuclear Criticality Aspects</i>• <i>International Experience in Dry Interim Storage</i>• <i>Advanced Fuel Cycles and Geological Disposal</i>
12:00 PM – 1:20 PM	Lunch Break
1:20 PM – 2:35 PM	Technical Sessions <ul style="list-style-type: none">• <i>Sensitivity and Uncertainty Analysis Tools and Methods</i>• <i>Biosphere Description and Modeling in Support of Disposal</i>• <i>Engineered Barriers: Container Corrosion</i>• <i>Engineered Barriers: Geochemical and Nuclear Criticality Aspects</i>• <i>International Experience in Dry Interim Storage</i>• <i>Advanced Fuel Cycles and Geological Disposal</i>
2:35 PM – 3:00 PM	Break
3:00 PM – 5:30 PM	Technical Sessions <ul style="list-style-type: none">• <i>Evaluation of Scenarios</i>• <i>Evaluations of Alternatives and Policy</i>• <i>Security, Safeguards, and Non-Proliferation—I</i>• <i>Engineered Barriers: Modeling Near Field Conditions</i>• <i>Used Fuel Management Programs and Planning</i>
4:15 PM – 4:30 PM	Break

THURSDAY, APRIL 14, 2011

8:30 AM – 11:35 AM	Technical Sessions <ul style="list-style-type: none">• <i>Approaches for Conceptual Model Uncertainty</i>• <i>DOE Nuclear Energy (NE) Program for Long Term Storage</i>• <i>Alternate Waste Forms</i>• <i>Used Fuel Management Policy Issues</i>
9:45 AM – 10:10 AM	Break
10:10 AM – 11:35 AM	Technical Sessions <ul style="list-style-type: none">• <i>Site Characterization Techniques and Facilities</i>• <i>Security, Safeguards, and Non-Proliferation—II</i>
11:30 AM – 1:00 PM	Box Lunch Social
1:00 PM	Conference Adjourns

Technical Sessions

MONDAY, APRIL 11, 2011, 8:15 A.M.–8:40 A.M.

Welcome and Opening Remarks

Grand Salon E/F

Speaker to be determined

MONDAY, APRIL 11, 2011, 8:40 A.M.–10:00 A.M.

Plenary—I

Grand Salon F

SPEAKER:



Dr. Peter Lyons (*U.S. Assistant Secretary of Nuclear Energy, U.S. Department of Energy (DOE)/NE-1*)



Catherine Haney (*Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission (NRC)*)

(15 minute break: 10:00 A.M. – 10:15 A.M.)

MONDAY, APRIL 11, 2011, 10:15 A.M.–12:30 P.M.

Panel Discussions—I and II: International HLW Program Status and Lessons Learned

Grand Salon E/F

Moderator: Dr. Wesley Patrick (*VP, Southwest Research Institute*)

PANELISTS:

- Mr. Ken Nash (*President, Nuclear Waste Management Organization (NWMO) of Canada*)
- Mr. Claes Thegerström (*President, SKB, Sweden*)
- Dr. Seong Won Park (*Sr. VP of Korea Atomic Energy Research Institute*)
- Dr. Gerald Ouzounian (*Director IP, Andra, France*)
- Dr. Weiming Chen (*Director, Beijing Research Institute of Uranium Geology, China*)
- Dr. Stratis Vomvoris (*Director ISP, Nagra, Switzerland*)
- Mr. John Mathieson (*Head of International, Nuclear Decommissioning Authority, UK*)

MONDAY, APRIL 11, 2011, 12:30 P.M.–2:00 P.M.

LUNCH BREAK

MONDAY, APRIL 11, 2011, 2:00 P.M.–4:45 P.M.

(15minute break at 3:15 P.M)

Track 1, Session 1: Post Closure Safety Assessment

Session Organizers: Peter Swift (*SNL*), Matt Kozak (*INTERA Inc.*),

George Danko (*Univ of Nevada, Reno*)

Session Chairs: Allan Hedin (*SKB*), Sean Russell (*NWMO*)

Grand Salon E/F

2:00 p.m.

(3345) A Performance Assessment Model for Generic Repository in Salt Formation

Joon H. Lee, Malcolm Siegel, Carlos Jove-Colon, Yifeng Wang (*SNL*)

2:25 p.m.

(3363) Performance Assessment for Korean Concept of Geological Disposal

Jihae Yoon, Joonhong Ahn (*University of California, Berkeley*)

2:50 p.m.

(3374) Postclosure Safety Assessment of a Deep Geological Repository for Canada's Used Nuclear Fuel

E. P. Kremer (*NWMO*), J. D. Avis (*Geofirma Eng*), T. Chshyolkova (*AECL*), F. Garisto, P. Gierszewski, M. Gobien, N. G. Hunt (*NWMO*), C. I. Kitson (*AECL*), C. L. D. Medri (*NWMO*), T. W. Melnyk, L. C. Wojciechowski (*AECL*)

3:30 p.m.

(3604) A Vision of Next Generation Performance Assessment Models

H. Makino, H. Umeki (*JAEA*), H. Takase (*Quintessa Ltd.*), I. G. McKinley (*McKinley Consulting*)

3:55 p.m.

(3362) Preliminary Performance Assessment for Deep Borehole Disposal of High-Level Radioactive Waste

Peter N. Swift, Bill W. Arnold, Patrick V. Brady, Geoff Freeze, Teklu Hadgu, Joon H. Lee, Yifeng Wang (*SNL*)

4:20 p.m.

(3426) Development of an Integrated Clay Generic Disposal System Environment Modeling Capability

W. Mark Nutt, Edgar E. Morris, Theodore H. Bauer, Nikolai Dosev (*ANL*)

Track 3, Sessions 2 and 4: Engineered Barriers: Container Types and Sealing Materials

Session Organizers: David Pickett (*CNWRA*), Frank Garisto (*NWMO*),

Asadul Chowdhury (*CNWRA*)

Session Chairs: David Sassani (*SNL*), Stephen Turner (*SAIC*)

Grand Salon A/B

2:00 p.m.

(3536) Large-Scale Tests of the Behaviour of Bentonite-Based Barriers: FEBEX & GAST

S. Vomvoris, I. Gaus, J. Rueedi, P. Marschall (*Nagra*)

2:25 p.m.

(3343) Feasibility Assessment of the Belgian Supercontainer Disposal Concept

W. Wacquier, H. Van Humbeeck, R. Gens (*ONDRAF-NIRAS*), S. Wickham, L. Harvey (*Galson Sciences Ltd.*), L. Areias (*EIG EURIDICE*), G. de Schutter (*Ghent Univ*), A. Van Cotthem, L. Villers (*Techum Tractebel Eng*)

Technical Sessions

2:50 p.m.

(3380) Application of the Prefabricated EBS Concept in Unsaturated, Oxidizing Host Media

Ernest Hardin, David Sassani (SNL)

3:30 p.m.

(3561) Polymer Composite Waste Containers for the Ultimate Disposal of Radioactive Waste

H. W. Bonin, V. T. Bui, D. Pagé, M. Walker, L.-L. Brown, I. Miedema, A. Mortley, J. R. Van Tine, Y. Saboui (Royal Military College of Canada)

3:55 p.m.

(3425) Use of Iron-Base Waste Packages in a Salt Repository

L. H. Brush, G. T. Roselle, Y.-L. Xiong (SNL)

4:20 p.m.

(3431) Anoxic Corrosion of Steel and Lead in Na-Cl±Mg Dominated Brines

G. T. Roselle (SNL)

Track 2, Session 3: Modeling Geodynamic and Hydrogeologic Processes

Session Organizers: Stratis Vomvoris (Nagra), Jude McMurry (CNWRA), Scott James (SNL)

Session Chairs: Jan-Olof Selroos (SKB), Stephen Self (NRC)

Grand Salon C/D

2:00 p.m.

(3427) Two-Dimensional Simulations of Magma Interaction with Subsurface Tunnels

Debashis Basu, Kaushik Das (CNWRA), Stephen Self (NRC)

2:25 p.m.

(4282) Groundwater Flow Modelling of Operational Temperate and Periglacial/Glacial Periods in the Swedish Safety Assessment SR-Site of a Spent Nuclear Fuel Repository at Forsmark

Jan-Olof Selroos (SKB), Sven Follin (SF Geologic AB)

2:50 p.m.

(3352) Modeling Single Well Injection-Withdrawal (SWIW) Tests for Characterization of Complex Fracture-Matrix Systems

Francois Cotte, Christine Doughty, Jim Houseworth, Jens Birkholzer (LBNL)

3:30 p.m.

(3411) Simulation of Infiltration at Yucca Mountain, Nevada

Teklu Hadgu, Laura Price, Palmer Vaughn, Josh Stein (SNL), Daniel Levitt (LANL)

3:55 p.m.

(3414) Sensitivity Analysis of Infiltration at Yucca Mountain, Nevada

Laura Price, Teklu Hadgu, Palmer Vaughn, Josh Stein (SNL), Daniel Levitt (LANL)

Track 8, Session 3: Advanced Fuel Cycles: Separation Process Technology

Session Organizer: Joonhong Ahn (Univ of California, Berkeley)

Session Chairs: George Saulnier (Areva), Francesco Cadini (Politecnico di Milano)

Grand Salon G/H

2:00 p.m.

(3479) A Comparison of Hanford and Savannah River Site High-Level Wastes

R.C. Philip Hill (EBR Consulting), Jacob G. Reynolds, Paul L. Rutland (Washington River Protection Solutions, LLC)

2:25 p.m.

(3580) Control of Radioactive Gas Releases from the Processing of Used Nuclear Fuel: Possible Waste Forms and Volume Considerations

R. T. Jubin, B. B. Spencer, G. D. Del Cul, B. D. Patton, D. W. Ramey (ORNL)

2:50 p.m.

(3475) Thermodynamic Modeling of Liquid-Liquid Extraction (LLE) for the System TBP-HNO₃-UO₂ (NO₃)₂-H₂O-Diluent

Carlos F. Jové Colón, Harry K. Moffat, Rekha R. Rao (SNL)

3:30 p.m.

(3478) Predicting Water Activity in Electrolyte Solutions with the Cisternas-Lam Model

Jacob G. Reynolds, Daniel A. Greer, Robert S. Disselkamp (Washington River Protection Solutions, LLC)

3:55 p.m.

(3542) On-Line Monitoring Techniques for Spent Nuclear Fuel Reprocessing

Amanda Casella, Sam Bryan, Tatiana Levitskaia, James Peterson, Troy Robinson, Crystal Rutherford (PNNL), Omed Muzaffery (Univ of California-Irvine), Amanda Lines (Purdue), Mikael Nilsson (Univ of California-Irvine)

Track 6, Session 3: Institutional Aspects of Repository Siting

Session Organizers: Charles McCombie (Arius), Robert Gamble (NVE County, Nevada)

Session Chairs: Olle Olsson (SKB), Ahmed Al Neaimi (ENEC)

Grand Salon I/J

2:00 p.m.

(3442) The Added Value Approach in Nuclear Waste Facility Siting Processes

Matti Kojo (Univ of Tampere), Phil Richardson (Galson Sciences Ltd)

2:25 p.m.

(3347) Site Selection for Canada's National Repository for Used Nuclear Fuel

Kathryn Shaver, Jo-Ann Facella (NWMO)

2:50 p.m.

(3569) Public Involvement and Site Selection of a Deep Geological Repository

Sébastien Farin, Gérald Ouzounian (Andra)

3:30 p.m.

(3459) Enhancing Acceptability and Credibility of Repository Development for Spent Nuclear Fuel

Hank C. Jenkins-Smith, Carol L. Silva, Kerry G. Herron (Univ of Oklahoma), Rob P. Rechar (SNL)

3:55 p.m.

(3438) Site Selection, Characterization, and Research and Development for Spent Nuclear Fuel and High-Level Waste Disposal

Rob P. Rechar (SNL), Frank V. Perry (LANL), Thomas A. Cotton (Complex Systems Group)

4:20 p.m.

(3320) Radioactive Waste Disposal in the U.S.

Aubrey V. Godwin (Arizona Radiation Regulatory Agency)

Technical Sessions

TUESDAY, APRIL 12, 2011, 8:00 A.M.–8:50 A.M.

Plenary Session—II

Grand Salon E/F

SPEAKER:

Shirley Olinger (*Associate Principal Deputy, Environmental Management, U.S. Department of Energy (DOE)*)

TUESDAY, APRIL 12, 2011, 9:00 A.M. – 11:55 A.M.

(25 minute break at 9:50 A.M.)

Track 5, Session 2: Special Session: Reaching a Milestone in the Swedish Nuclear Waste Management Program—License Application for a KBS-Repository at Forsmark—Papers/Panel

Session Chair: John Kessler (*EPRI*)

Grand Salon E/F

9:00 a.m.

Overview of the Road to the License Application

Claes Thegerström (*SKB*)

9:25 a.m.

(4280) The License Application for the KBS-3 System—A Milestone for the Swedish Spent Fuel Disposal Program

Claes Thegerström, Olle Olsson (*SKB*)

10:15 a.m.

The Selection of the Forsmark Site

Olle Olsson (*SKB*)

10:40 a.m.

The License Application for a KBS-3 Repository at Forsmark

Olle Olsson (*SKB*)

11:05 a.m.

(4281) The SR-Site Safety Assessment for Licensing a Spent Fuel Repository in Sweden

Allan Hedin (*SKB*), Eva Andersson (*Studsvik Nuclear AB*), Johan Andersson (*JA Streamflow AB*), Christina Greis, Lena Zetterström Evins, Ulrik Kautsky, Christina Lilja, Tobias Lindborg (*SKB*), Maria Lindgren (*Kemakta Konsult AB*), Martin Löfgren (*Niressa*), Raymond Munier, Jens-Ove Näslund, Ignasi Puigdomenech, Patrik Sellin, Jan-Olof Selroos (*SKB*), Kristina Skagius (*Kemakta Konsult AB*), Kastriot Spahiu, Fredrik Vahlund (*SKB*)

11:30 a.m.

The Next Steps Towards Implementation

Claes Thegerström (*SKB*)

TUESDAY, APRIL 12, 2011, 10:15 A.M. – 11:55 A.M.

Track 11, Session 1: Retrieval and Reversibility

Session Organizer: Rob P. Rechard (*SNL*)

Session Chair: Rob Rechard (*SNL*)

Grand Salon C/D

10:15 a.m.

(3589) The NEA International Project on Reversibility and Retrieval—Overview and Findings

Claudio Pescatore (*OECD*), Richard Ferch (*Consultant*)

10:40 a.m.

(3574) International Retrieval Scale for Waste in Geological Disposal

JN Dumont (*Andra*), Claudio Pescatore (*OECD*)

11:05 a.m.

(3402) Repositories with Retrieval Spent Nuclear Fuel: Four Options, Four Geologies

C. W. Forsberg (*MIT*), L. R. Dole (*ORNL*)

11:30 a.m.

(3356) The Evolution of Waste Retrieval/Removal Requirements for the Waste Isolation Pilot Plant

G. Ross Kirkes, S. W. Wagner (*SNL*)

Track 7, Session 4: Technical Issues in Dry Storage

Session Organizers: Vincenzo Rondinella (*ITU*), Brady Hanson (*PNL*)

Session Chair: George Danko (*U. of Nevada, Reno*)

Grand Salon G/H

10:15 a.m.

(3458) Effects of Helium Build-up on Nuclear Fuel Evolution During Storage

Vincenzo V. Rondinella, Thierry Wiss, Emilio Maugeri, Jean-Yves Colle (*EC-JRC*)

10:40 a.m.

(3376) Impacts Associated with Early Transfer of SNF from Pool Storage to Dry Storage

Eileen M. Supko (*Energy Resources International, Inc.*), John H. Kessler (*EPRI*)

11:05 a.m.

(3450) Repository Independent Packaging Strategy of DOE-Owned SNF

Abdelhalim A. Alsaed (*Enviro Nuclear Services*), Brett W. Carlsen (*INL*)

Track 8, Session 1: Modeling for Advanced Fuel Cycle Performance

Session Organizer: Joonhong Ahn (*Univ of California, Berkeley*)

Session Chair: Andrew Sowder (*EPRI*)

Grand Salon I/J

10:15 a.m.

(3375) Comparison of Fuel Cycle Costs for Alternative Fuel Cycles

Eileen M. Supko (*Energy Resources International, Inc.*), Albert Machiels, Andrew Sowder (*EPRI*)

10:40 a.m.

(3403) Transient Analysis of Nuclear Technologies—Waste Reduction and Environmental Impact

J. Hart (*NRG*)

11:05 a.m.

(3404) Impact of (V)HTRs Introduction on the Nuclear Fuel Cycle

J. Hart, A. I. van Heek (*NRG*)

Technical Sessions

TUESDAY, APRIL 12, 2011, 12:00 P.M.–1:30 P.M.

Conference Luncheon

Sandia Ballroom

Speaker: Lake Barrett (*L. Barrett Consulting, LLC*)

TUESDAY, APRIL 12, 2011, 1:30 P.M. – 3:35 P.M.

Track 1, Session 6: Repository Information Management and Decision Support

Session Organizers: Peter Swift (*SNL*), Matt Kozak (*INTERA Inc.*),

George Danko (*Univ of Nevada, Reno*)

Session Chairs: Lena Morén (*SKB*), H. Makino (*JAEA*)

Grand Salon A/B

1:30 p.m.

(3571) Support of the Repository Closure Decision with an Integrated Safety Case

Hideki Kawamura (*Obayashi Corp.*), Ian G. McKinley (*McKinley Consulting*)

1:55 p.m.

(3430) The Disposal Systems Evaluation Framework for DOE-NE

James A. Blink (*LLNL*), Carlos F. Jove-Colon (*SNL*), Harris R. Greenberg, William G. Halsey (*LLNL*), Mark Nutt (*ANL*), Mark Sutton (*LLNL*)

2:20 p.m.

(3598) A Geographic Information System-Based Tool for Evaluating Siting Options

G. T. Mays, R. J. Belles, O. Omitaomu (*ORNL*)

2:45 p.m.

(3350) A Requirements Management System for a Spent Nuclear Fuel Repository

Lena Morén, Åsa Olson (*SKB*)

Track 12, Session 1: Fuel Cycle and Disposal System Optimization

Session Organizer: Charles Forsberg (*MIT*)

Session Chairs: Peter Swift (*SNL*), Joonhong Ahn (*Univ of California, Berkeley*)

Grand Salon C/D

1:30 p.m.

(3213) Alternative Fuel-Cycle Repository Designs

Charles Forsberg (*MIT*)

1:55 p.m.

(3565) A Multi-Functional Storage Facility and/or Repository for Yucca Mountain

G. Danko, D. Bahrami (*University of Nevada, Reno*)

2:20 p.m.

(3441) A Preliminary Study on Back-End Fuel Cycle Scenario for Searching a Task in Korea Industry

Jong Kuk Lee, Yoon Hee Lee, Dong Hyoung Lee, Sung Yeop Jung, Sung Yeop Kim, Sang Chul Lee (*KAIST*), Kun Jai Lee (*KAIST/KUSTAR*), Seong Ki Lee, Ki Seong Choi, Chang Sok Cho (*KNFC*)

2:45 p.m.

(3575) Importance of Decay Time on HLW Disposal

E. D. Collins, B. B. Spencer, G. D. Del Cul (*ORNL*)

3:10 p.m.

(3392) Closing the Nuclear Fuel Cycle with Salt

Yifeng Wang (*SNL*), Michael Simpson (*INL*), Jonathan Rath, Francis Hansen, Joon H. Lee, Carlos Jove-Colon, Kevin McMahon, Peter Swift (*SNL*)

Track 2, Session 4: Natural Analogs

Session Organizers: Stratis Vomvoris (*Nagra*), Jude McMurry (*CNWRA*),

Scott James (*SNL*)

Session Chairs: John Walton (*U. of Texas at El Paso*), Jude McMurry (*CNWRA*)

Grand Salon G/H

1:30 p.m.

(3568) Application of Natural Analogues to Support a Realistic Safety Case

Hideki Kawamura (*Obayashi Corp.*), Ian G. McKinley (*McKinley Consulting*),

Shoko Yashio (*Obayashi Corp.*)

1:55 p.m.

(3412) Peña Blanca Natural Analogue Project: Summary of Activities

Schön Levy, Steven Goldstein (*LANL*), Patrick F. Dobson (*LBNL*), Philip Goodell (*Univ of Texas at El Paso*), Teh-Lung Ku (*Univ of Southern California*), Amr Abdel-Fattah (*LANL*), George Saulnier (*AREVA*), Mostafa Fayek (*Univ of Manitoba*), Rodrigo de la Garza (*Universidad Autónoma de Chihuahua*)

2:20 p.m.

(3365) Natural Disturbances of Argillaceous Caprock Integrity: Petroleum Analogues for Nuclear Waste Repository Systems

J. E. Houseworth (*LBNL*)

2:45 p.m.

(3369) Engineered and Natural New Mexico Analogues for Geologic Isolation of Heat Generating Waste in Rock Salt

Norbert T. Rempe (*Independent*)

Track 3, Session 7: Engineered Barriers: Waste Forms

Session Organizers: David Pickett (*CNWRA*), Frank Garisto (*NWMO*),

Asadul Chowdhury (*CNWRA*)

Session Chairs: David Pickett (*CNWRA*), Christopher Markley (*NRC*)

Grand Salon I/J

1:30 p.m.

(3581) Review of Results for the OECD/NEA Phase VII Benchmark:

Study of Spent Fuel Compositions for Long-Term Disposal

G. Radulescu, J. C. Wagner (*ORNL*)

1:55 p.m.

(3456) A Flexible Model for Calculating Potential Future Radionuclide Inventories

Timothy Sippel (*NRC*), Earl Lynn Tipton (*CNWRA*), Christopher Markley (*NRC*)

2:20 p.m.

(3472) Solubilities of Radionuclides Released from Graphite Waste

Calculated Using PHREEQC

Bret P. van den Akker, Joonhong Ahn (*University of California, Berkeley*)

2:45 p.m.

(3522) Uranium Metal Oxidation, Grinding and Encapsulation in BoroBond: TRU Waste Management

Kevin S. Cook, Larry Addington, Elizabeth Utley (*Boron Products LLC*)

Technical Sessions

3:10 p.m.

(3396) Model Abstraction of Waste Form Degradation in Alternative Disposal Site

T. Ahn (NRC), H. Jung, E. L. Tipton (CNWRA), T. Sippel (NRC)

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

Session Organizer: Ruth Weiner (SNL)

Session Chair: Ruth F. Weiner (SNL)

Cimarron

1:30 p.m.

(3761) A Review of the Risks and Risk Models for Transporting Very Radioactive Materials

Ruth F. Weiner (SNL)

1:55 p.m.

(3413) Railway Accident Analyses for Spent Nuclear Fuel Transportation Packages

Todd S. Mintz, George Adams, Marius Necsoiu (CNWRA), Chris Bajwa, Earl Easton (NRC)

2:20 p.m.

(3341) Repository Transportation Planning, Risk Management, and Public Acceptance: Lessons Learned

Robert J. Halstead (State of Nevada, Agency for Nuclear Projects), Fred C. Dilger (Black Mountain Research)

2:45 p.m.

(3420) Roadway Accident Analyses for Spent Nuclear Fuel Transportation Packages

Todd S. Mintz, George Adams (CNWRA), Chris Bajwa, Earl Easton (NRC)

Track 6, Session 2: International Progress in Disposal Programs

Session Organizers: Charles McCombie (ARIUS), Bob Gamble (NYE County, Nevada)

Session Chairs: Lawrence Johnson (Nagra), Rod McCullum (NEI)

Santa Fe

1:30 p.m.

(3436) Lessons Learned from the Five Decade Pursuit of Geologic Disposal in the U.S. and Abroad

Andrew Sowder, John Kessler (EPRI), Michael Apted, Matthew Kozak, Michael Stenhouse (INTERA Inc.)

1:55 p.m.

(3553) Radioactive Waste Disposal Within a Clay Environment: The French Experience

Marie-Claude Dupuis, Fabrice Boissier, Thibault Labalette, Patrick Landais, Gérald Ouzounian (Andra)

2:20 p.m.

(3507) Staged Implementation of the Japanese Geological Disposal Project

H. Tsuchi, K. Ishiguro, K. Kaku, Y. Kubo, S. Shimura (NUMO)

2:45 p.m.

(3513) Background and Overview of the NUMO 2010 Technical Report

H. Tsuchi, K. Ishiguro, K. Kaku, Y. Kubo, S. Shimura (NUMO)

3:10 p.m.

(3534) The Nagra RD&D Plan for Disposal of Radioactive Waste in Switzerland

Lawrence Johnson, Piet Zuidema (Nagra)

(20 minute break: 3:35 P.M. – 3:55 P.M.)

TUESDAY, APRIL 12, 2011, 3:55 P.M. – 6:00 P.M.

Track 1, Session 3: Modeling Radionuclide Release and Transport

Session Organizers: Peter Swift (SNL), Matt Kozak (INTERA, Inc),

George Danko (Univ of Nevada, Reno)

Session Chairs: Nava Garisto (SENES), Paul Reimus (LANL)

Grand Salon A/B

3:55 p.m.

(3408) Probabilistic Transport Modelling in a Canadian Used Fuel Repository

M. Gobien (NWMO), J. D. Avis (Geofirma Engineering Ltd.), T. Chshyolkova (AECL),

F. Garisto, P. Gierszewski, N. G. Hunt, C. I. Kitson, E. P. Kremer,

C. L. D. Medri (NWMO), T. W. Melnyk, L. C. Wojciechowski (AECL)

4:20 p.m.

(3447) Challenges in Monte Carlo Simulation of Non-Linear Radioactive Contaminant Release Processes

F. Cadini, J. De Sanctis (Politecnico di Milano), E. Zio (Politecnico di Milano/ Ecole Centrale Paris and Supelec)

4:45 p.m.

(3473) The Release and Transport of Radionuclides from Deep-Burn Spent Fuel

Bret P. van den Akker, Joonhong Ahn (University of California, Berkeley)

5:10 p.m.

(3470) Incorporating Actinide Sorption in Models of TRISO Repository Performance

G. H. Schmidt, G. S. Cerefice (Univ of Nevada, Las Vegas)

5:35 p.m.

(4283) Radionuclide Transport Modeling for the Forsmark Repository Safety Assessment SR-Site

Scott L. Painter (LANL), Christina Greis (SKB), Maria Lindgren,

James N. Crawford (Kemakta Konsult AB), Allan Hedin (SKB)

Track 5, Session 1: Licensing Process, Reviews, and Guidance

Session Organizers: Barry Butterfield (HDR), Daniel Bullen (EFAA)

Session Chairs: Jack Davis (NRC), Stratis Vomvoris (Nagra)

Grand Salon C/D

3:55 p.m.

(3481) Pre-Project Review of a Proposed Canadian Deep Geological Repository for Used Fuel

L. Lang, A. Khan (NWMO)

4:20 p.m.

(3674) From CNE1 (1991 Law) to CNE2 (2006 Law)

Pierre Berest (CNE2)

4:45 p.m.

(3504) Review of U.S. Regulations for Geologic Disposal for Used Fuel and High-Level Radioactive Waste

Matthew W. Kozak (INTERA Inc), Andrew Sowder (EPRI),

Michael J. Apted (INTERA Inc), John Kessler (EPRI)

5:10 p.m.

(3576) Licensing Review of a Spent Nuclear Fuel Repository in Sweden

Björn Dverstorpp, Bo Strömberg, Eva Simic (Swedish Radiation Safety Authority)

Technical Sessions

Track 2, Session 2: Coupled Processes

Session Organizers: Stratis Vomvoris (*Nagra*), Jude McMurry (*CNWRRA*), Scott James (*SNL*)

Session Chairs: Gerald Ouzounian (*Andra*), Christine Stockman (*SNL*)

Grand Salon G/H

3:55 p.m.

(3354) Evaluation of Coupled Thermal-Hydrological-Mechanical-Chemical Processes for Deep Disposal in Different Geologic Media

Chandrika Manepally (*CNWRRA*), Randall Fedors (*NRC*)

4:20 p.m.

(3355) Thermal-Hydrologic-Chemical-Mechanical Modeling of Deep Borehole Disposal

Bill W. Arnold, Teklu Hadgu, Daniel Clayton, Courtney Herrick (*SNL*)

4:45 p.m.

(3424) Experimental Study and Numerical Modeling of Natural Convection with Condensation

Kaushik Das (*CNWRRA*), Randall Fedors (*NRC*), Chandrika Manepally, Debashis Basu (*CNWRRA*)

5:10 p.m.

(3358) Constitutive Relationships for Elastic Deformation of Clay Rock

H. H. Liu, J. Rutqvist, J. T. Birkholzer (*LBNL*)

Track 6, Session 1: U.S. Disposal Policy Issues

Session Organizers: Charles McCombie (*Arius-Switzerland*),

Robert Gamble (*NYE County, Nevada*)

Session Chair: Joseph Ziegler (*Nye County, Nevada*)

Grand Salon I/J

3:55 p.m.

(3506) United States Used Nuclear Fuel Policy Options

Lake H Barrett (*L. Barrett Consulting, LLC*)

4:20 p.m.

(3331) Some Personal Observations of the “Late” Yucca Mountain Project

Barry L. Butterfield (*HDR*), Daniel B. Bullen (*Exponent*)

4:45 p.m.

(3463) Technical Lessons to Learn in Disposal of Spent Nuclear Fuel and High-Level Waste

Rob P. Recharad (*SNL*), Thomas A. Cotton (*Complex Systems Group*),

Mark Nutt (*ANL*), Joe T. Carter (*SRNS*), Frank V. Perry (*LANL*),

Ruth F. Weiner (*SNL*), James A. Blink (*LLNL*)

5:10 p.m.

(3323) Nye County Perspective on Yucca Mountain Repository

L. Darrell Lacy, Robert P. Gamble (*Nye County Nuclear Waste Repository Project Office*)

5:35 p.m.

(3548) Disposal of High-Level Radioactive Waste in the USA at the End of 2010—A View with Peripheral and Forward Visions

Leif G. Eriksson (*Nuclear Waste Disposition*), George E. Dials (*Be³W Conversion Services*)

Track 7, Session 3: Programmatic and Safety Evaluations for Interim Storage

Session Organizers: Vincenzo Rondinella (*ITU*), Brady Hanson (*PNL*)

Session Chairs: Brady Hanson (*PNL*), Biswajit Dasgupta (*CNWRRA*)

Cimarron

3:55 p.m.

(3406) Centralized Interim Storage—Does It Make Sense Today?

Steven P. Nesbit (*Duke Energy*)

4:20 p.m.

(3398) Interim Storage, Environmental Justice, and Generational Equity

C. D. Leigh, L. J. Dotson (*SNL*)

4:45 p.m.

(3599) An Information Management System for a Spent Nuclear Fuel Interim Storage Facility

Karl Horak, Todd Giles (*SNL*), Hong-Nian Jow (*Jow International*),

Robert Finch (*SNL*), Hsien-Lang Chiu (*Taiwan Power Co*)

5:10 p.m.

(3434) Probabilistic Radiological Consequence Module for Systematic Safety Analysis

Ronald Benke, George Adams, Razvan Nes, Hundal Jung,

Biswajit Dasgupta (*CNWRRA*), Jongtae Jeong (*KAERI*)

Track 3, Session 1: Underground Repository Design Concepts

Session Organizers: David Pickett (*CNWRRA*), Frank Garisto (*NWMO*),

Asadul Chowdhury (*CNWRRA*)

Session Chairs: Michael J. Driscoll (*MIT*), Asadul Chowdhury (*CNWRRA*)

Santa Fe

3:55 p.m.

(3238) A Multibranch Borehole Approach to HLW Disposal

J. S. Gibbs, J. Buongiorno, M. J. Driscoll (*MIT*)

4:20 p.m.

(3304) Drop-in Concept for Deep Borehole Canister Emplacement

E. A. Bates, M. J. Driscoll, J. Buongiorno (*MIT*)

4:45 p.m.

(3515) Improvement of Repository Concepts for Realistic Underground Environmental Conditions in Japan

S. Kubota, S. Suzuki, K. Ishiguro, H. Tsuchi (*NUMO*)

5:10 p.m.

(3521) Reference Used Fuel Repository Designs in Crystalline and Sedimentary Rock

S. Russell, A. Murchison, D. Wilson (*NWMO*)

WEDNESDAY, APRIL 13, 2011, 8:00 A.M.–10:20 A.M.

Panel Discussion: Future Direction for the U.S. High-Level Waste Program

Moderator: Paul Dickman (*ANL*)

Grand Salon F

PANELISTS:

- Dr. Charles Forsberg (*Massachusetts Institute of Technology (MIT)*)
- Dr. Dorothy Davidson (*Vice President, Areva*)
- Mr. Lawrence Kokajko (*Director HLWRS, U.S. Nuclear Regulatory Commission (NRC)*)
- Dr. Peter Swift (*Sandia National Laboratories (SNL)*)
- Mr. Rod McCullum (*Nuclear Energy Institute (NEI)*)
- Mr. Robert Sanchez (*U.S. Government Accountability Office (U.S. GAO)*)

(25 minute break: 10:20 A.M. – 10:45 A.M.)

Technical Sessions

WEDNESDAY, APRIL 13, 10:45 A.M. – 12:00 P.M.

Track 1, Session 4: Sensitivity and Uncertainty Analysis Tools and Methods

Session Organizers: Peter Swift (SNL), Matt Kozak (INTERA, Inc.), George Danko (Univ of Nevada, Reno)

Session Chairs: James Blink (LLNL), Scott James (SNL)

Grand Salon F

10:45 a.m.

(3370) Statistical Analysis of a Repository Design in Argillaceous Rock
T. J. Schröder, E. Rosca-Bocancea, J. Hart (JRC-IE), A. Costescu-Badea, R. Bolado Lavin (NRG)

11:10 a.m.

(3564) The Importance of Transport Parameter Cross Correlations in Natural Systems Radionuclide Transport Models
Paul W. Reimus (LANL)

11:35 a.m.

(3400) Parametric Study for Radionuclide Transport in a Geological Repository on Modeled Geometric Fidelity
Matthew Linhares, Joonhong Ahn (Univ of California, Berkeley)

This session continues after the lunch break

Track 4, Session 1: Biosphere Description and Modeling in Support of Disposal

Session Organizer: Andrew Sowder (EPRI)

Session Chairs: Ray Clark (EPA), Lisa Griffault (Andra)

Grand Salon A/B

10:45 a.m.

(3518) - Simple Biosphere Model for Non-Site-Specific Performance Assessments
R. R. Benke (CNWRA), A. T. Gray (NRC), P. A. LaPlante (CNWRA)

11:10 a.m.

(3401) - Compartment Marine Ecosystem Model for Prediction of the Radionuclide Transport
Lena Konovalenko, Linda Kumblad, Clare Bradshaw, Ulrik Kautsky (SKB)

11:35 a.m.

(3467) – Groundwater Recharge on the Western Side of Yucca Mountain Using Surface-Runoff Chemistry
Omar Al-Qudah, John Walton, Arturo Woocay (University of Texas at El Paso), John Klenke (Nye County Nuclear Waste Repository Project Office)

This session continues after the lunch break

Track 3, Session 3: Engineered Barriers: Container Corrosion

Session Organizers: David Pickett (CNWRA), Frank Garisto (NWMO), Asadul Chowdhury (CNWRA)

Session Chairs: Carl Di Bella (NWTRB), Frank Garisto (NWMO)

Grand Salon C/D

10:45 a.m.

(3353) Representation of Copper and Carbon Steel Waste Package Degradation in a Generic Performance Assessment Model
Hundal Jung (CNWRA), Tae Ahn (NRC), Xihua He (CNWRA)

11:10 a.m.

(3460) Model Abstraction of Stainless Steel Waste Package Degradation
X. He, O. Pensado (CNWRA), T. Ahn (NRC), P. Shukla (CNWRA)

11:35 a.m.

(3361) Atmospheric Chemistry Impacts on the Corrosion Environments of Waste Packages
Bruce E. Kirstein, Carlos W. Di Bella (NWTRB)

This session continues after the lunch break

Track 3, Session 5: Engineered Barriers: Geochemical and Nuclear Criticality Aspects

Session Organizers: David Pickett (CNWRA), Frank Garisto (NWMO), Asadul Chowdhury (CNWRA)

Session Chairs: Paul E. Mariner (SNL), J. M. Scaglione (ORNL)

Grand Salon G/H

10:45 a.m.

(3594) Redox Evolution of a Cementitious Geological Disposal Facility
Mireia Grivé, Lara Duro, Cristina Domènech, Joaquín Salas (Amphos 21)

11:10 a.m.

(3419) Prediction of Formation Constants of $\text{NdH}_2\text{B}_4\text{O}_7^{2+}$ up to 200°C
Yongliang Xiong (SNL), Marian Borkowski (LANL), Larry Brush (SNL)

11:35 a.m.

(3593) Potential Long-Term Conversion Mechanisms of Spent Fuel after Repository Closure
Lara Duro, Mireia Grivé, Jordi Bruno (Amphos 21)

This session continues after the lunch break

Track 7, Session 1: International Experience in Dry Interim Storage

Session Organizers: Vincenzo Rondinella (ITU), Brady Hanson (PNL)

Session Chairs: Vincenzo Rondinella (ITU), Roland Hueggenberg (GNS)

Grand Salon I/J

10:45 a.m.

(3446) Management of Spent Fuel from the Perspective of German Industry
Roland Hueggenberg, Wilhelm Graf, Astrid Jussofie (GNS)

11:10 a.m.

(3314) Safety Aspects of Long Dry Interim Cask Storage of Spent Fuel in Germany
Holger Völzke, Dietmar Wolff (BAM Federal Inst for Materials Resch and Testing)

11:35 a.m.

(3556) Experience and Research on the Interim Storage of High-Level and Intermediate-Level Long-Lived Waste in France
Jean-Michel Hoorelbeke, Thibaud Labalette, Gérald Ouzounian (Andra)

This session continues after the lunch break

Track 8, Session 2: Advanced Fuel Cycles and Geological Disposal

Session Organizer: Joonhong Ahn (Univ of California, Berkeley)

Session Chairs: Gene W. Rowe (NWTRB), Ernest L Hardin (SNL)

Cimarron

Technical Sessions

10:45 a.m.

(3384) Fuel Cycle Potential Waste for Disposition
Joe T. Carter (*SRNS*), Alan Luptak (*INL*)

11:10 a.m.

(3444) Pyro-Processing and Its Implication to Radioactive Waste Disposal
Yongsoo Hwang (*CSIS/KAERI*), Kwangseok Lee (*KAERI*)

11:35 a.m.

(3391) Thermal Management of Wastes from Advanced Fuel Cycles
Ernest Hardin, Laura Price, Peter Swift (*SNL*)

This session continues after the lunch break

WEDNESDAY, APRIL 13, 12:00 – 1:20 P.M.

LUNCH BREAK

WEDNESDAY, APRIL 13, 1:20 P.M. – 2:35 P.M.

Track 1, Session 4: Sensitivity and Uncertainty Analysis Tools and Methods

Session Organizers: Peter Swift (*SNL*), Matt Kozak (*INTERA, Inc.*),
George Danko (*Univ of Nevada, Reno*)

Session Chairs: James Blink (*LLNL*), Scott James (*SNL*)

Grand Salon F

1:20 p.m.

(3409) Representative Pathway Length for Contaminant Transport in
Performance Assessment Models
Stuart Stothoff, Osvaldo Pensado (*CNWRA*), Jin-Ping Gwo (*NRC*)

1:45 p.m.

(3455) β -SOAR: A Flexible Tool for Analyzing Disposal of Nuclear
Waste
Christopher Markley (*NRC*), E. Lynn Tipton, James Winterle,
Osvaldo Pensado (*CNWRA*), Jin-Ping Gwo (*NRC*)

2:10 p.m.

(3338) Monte Carlo Simulations for Generic Granite Repository
Studies
Shaoping Chu (*LANL*), Joon H. Lee, Yifeng Wang (*SNL*)

Track 4, Session 1: Biosphere Description and Modeling in Support of Disposal

Session Organizer: Andrew Sowder (*EPRI*)

Session Chairs: Ray Clark (*EPA*), Lisa Griffault (*Andra*)

Grand Salon A/B

1:20 p.m.

(3417) Radioactive Disequilibria in the Saturated Zone Transport Model
and the Biosphere Model for the Yucca Mountain Repository—The Case of
Radon-222
Maryla A. Olszewska-Wasiolek, Bill W. Arnold (*SNL*)

1:45 p.m.

(3440) Andra's Strategy and Approach Applied in Defining and Describing
Biosphere(s) for Safety Assessment
L. Griffault, J. Brulhet, Y. Thiry, S. Voinis, E. Leclerc (*Andra*)

2:10 p.m.

(3577) Field Study on Discharge of Natural Isotopes from the ^{238}U and
 ^{232}Th Series Through Quaternary Deposits
Anders Worman (*The Royal Institute of Technology*), Lars Marklund (*The Royal Institute
of Technology/The Swedish Meteorological*), Jose Luis Gutierrez Villanueva (*SLU/
Univ of Cantabria*), Klas Rosén (*SLU*), Shulan Xu,
Björn Dverstorp (*Swedish Radiation Safety Authority*)

Track 3, Session 3: Engineered Barriers: Container Corrosion

Session Organizers: David Pickett (*CNWRA*), Frank Garisto (*NWMO*),
Asadul Chowdhury (*CNWRA*)

Session Chairs: Carl Di Bella (*NWTRB*), Frank Garisto (*NWMO*)

Grand Salon C/D

1:20 p.m.

(3435) Estimating the Extent of Damage to Waste Package Surfaces by
Localized Corrosion in Potential Disposal Environments
Pavan Shukla, Roberto Pabalan, Osvaldo Pensado (*CNWRA*)

1:45 p.m.

(3519) Assessment of Stress Corrosion Cracking Susceptibility of 316 Stainless
Steel in Different Disposal Environments
K. Chiang, P. Shukla (*CNWRA*)

Track 3, Session 5: Engineered Barriers: Geochemical and Nuclear Criticality Aspects

Session Organizers: David Pickett (*CNWRA*), Frank Garisto (*NWMO*),
Asadul Chowdhury (*CNWRA*)

Session Chairs: Paul E. Mariner (*SNL*), J. M. Scaglione (*ORNL*)

Grand Salon G/H

1:20 p.m.

(3587) Review of Yucca Mountain Disposal Criticality Studies
J. M. Scaglione, J. C. Wagner (*ORNL*)

Track 7, Session 1: International Experience in Dry Interim Storage

Session Organizers: Vincenzo Rondinella (*ITU*), Brady Hanson (*PNL*)

Session Chairs: Vincenzo Rondinella (*ITU*), Roland Hueggenberg (*GNS*)

Grand Salon I/J

1:20 p.m.

(3332) Long-Term Containment Performance Test of Metal Cask
Koji Shirai, Masumi Wataru, Toshiari Saegusa, Chihiro Ito (*CRIEPI*)

1:45 p.m.

(3333) SCC Evaluation Test of Multi-Purpose Canister
Koji Shirai, Junichi Tani, Taku Arai, Masumi Wataru, Hirofumi Takeda,
Toshiari Saegusa (*CRIEPI*)

Track 8, Session 2: Advanced Fuel Cycles and Geological Disposal

Session Organizer: Joonhong Ahn (*Univ of California, Berkeley*)

Session Chairs: Gene W. Rowe (*NWTRB*), Ernest L Hardin (*SNL*)

Cimarron

1:20 p.m.

(3387) Low Level Waste Generation From Various Fuel Cycle Options
Robert H. Jones (*SRNS*)

Technical Sessions

1:45 p.m.

(3399) Cradle-to-Grave Analysis of Fusion-Fission Transmutation Fuel Cycles

Christian D. Di Sanzo, Joonhong Ahn (*Univ of California, Berkeley*)

2:10 p.m.

(3346) Nuclear Waste Assessment System for Technical Evaluation (NUWASTE)

Gene Rowe, Mark Abkowitz, Nigel Mote, Bruce Kirstein (*NWTRB*)

(25 minute break: 2:35 – 3:00 P.M.)

WEDNESDAY, APRIL 13, 2011, 3:00 P.M. – 5:30 P.M.

Track 1, Session 2: Evaluation of Scenarios

Session Organizers: Peter Swift (*SNL*), Matt Kozak (*INTERA, Inc.*),

George Danko (*Univ of Nevada, Reno*)

Session Chairs: Kenichi Kaku (*NUMO*), Osvaldo Pensado (*CNWRA*)

Grand Salon F

3:00 p.m.

(3570) A Storyboard-Led Hybrid Development Method for Safety Assessment Scenarios

Shoko Yashio, Hideki Kawamura (*Obayashi Corp.*), Keiichiro Wakasugi (*JAEA*), Takeshi Ebashi, Katsuhiko Ishiguro (*NUMO*), Ian G. McKinley (*McKinley Consulting*)

3:25 p.m.

(3573) Hydrothermal Scenario Development for Japanese Geological Disposal Systems

Hideki Kawamura (*Obayashi Corp.*), Ian G. McKinley (*McKinley Consulting*), Shigeyuki Saito (*JNES*)

3:50 p.m.

(3407) Modeling Disruptive Events Using the β -SOAR Model: Levels of β -SOAR Model Flexibility in Applications and Initial Insights

J. Gwo, T. Ahn (*NRC*), X. He (*CNWRA*)

(15 minute break: 4:15-4:30 P.M.)

4:30 p.m.

(3357) Safety Assessment for a Glaciation Scenario

F. Garisto (*NWMO*), R. Walsh (*Geofirma Engineering*), L. Wojciechowski (*AECL*), J. Avis (*Geofirma Engineering*), T. Chshyolkova (*AECL*), P. Gierszewski (*NWMO*), M. Gobien (*Geofirma Engineering*), C. Kitson (*NWMO*), T. Melnyk, J. Miller (*AECL*)

4:55 p.m.

(3516) Scenario Development Methodology for Dynamic System Evolution in Coastal Areas

Takeshi Ebashi, Katsuhiko Ishiguro, Keisuke Ishida (*NUMO*), Hiroyasu Takase, Masaaki Yamaguchi, Daisuke Kawasaki (*Quintessa Japan*)

5:20 p.m.

(3433) Features, Events and Processes (FEPS) for the Used Fuel Disposition Campaign

James A. Blink (*LLNL*), Florie Caporuscio (*LANL*), James C. Cunnane (*ANL*), Geoff Freeze (*SNL*), Harris R. Greenberg (*LLNL*), James E. Houseworth (*BNL*), Paul Mariner (*SNL*)

Track 1, Session 7: Evaluations of Alternatives and Policy

Session Organizers: Peter Swift (*SNL*), Matt Kozak (*INTERA, Inc.*), George Danko (*Univ of Nevada, Reno*)

Session Chairs: Bjorn Dverstorp (*Swedish Radiation Safety Authority*), Abe Van Luik (*DOE-WIPP*)

Grand Salon A/B

3:00 p.m.

(3342) Belgian Feasibility Strategy and Assessment Methodology for Geological Disposal

William Wacquier, Hughes Van Humbeeck (*ONDRAF/NIRAS*), Steve Wickham, Liz Harvey (*Galson Sciences Ltd*)

3:25 p.m.

(3428) A Simplified Performance Assessment Model for Radioactive Waste Disposal Alternatives

Geoff Freeze, Joon H. Lee (*SNL*)

3:50 p.m.

(3310) Policy Issues Associated with Deep Borehole HLW Disposal

K. G. Jensen, M. J. Driscoll (*MIT*)

(15 minute break: 4:15-4:30 P.M.)

4:30 p.m.

(3319) Risk-Informed Evaluations of Waste Form Performance in Disposal Systems

Michael Apted (*INTERA Inc.*)

4:55 p.m.

(3325) Safety Strategy and Assessment for a German HLW-Repository in Salt

Jan Richard Weber, Siegfried Keller, Sabine Mrugalla (*Bundesanstalt für Geowissenschaften und Rohstoffe*), Jens Wolf, Dieter Buhmann, Jörg Mönig (*GRS*), Wilhelm Bollingerfehr, Jürgen Krone, Andree Lommerzheim (*DBE TECHNOLOGY*)

5:20 p.m.

(3379) Geologic Disposal Options in the USA

F. D. Hansen, E. Hardin, A. Orrell (*SNL*)

Track 10, Session 1: Security, Safeguards, and Non-Proliferation—I

Session Organizers: Al Aziz Eddebarh (*ENEC*), Erik Kremer (*NWMO*)

Session Chairs: Jack Parrott (*NRC*), Al Aziz Eddebarh (*ENEC*)

Grand Salon C/D

3:00 p.m.

(3558) Securing and Safeguarding High Level Waste

Markku Koskelo, Steve Kadner, Mike Ondrik, Dennis Mangan (*Aquila Technologies*)

3:25 p.m.

(3373) Role of Neutron Detection in the High Reliability Safeguards Approach

R. A. Borrelli (*University of California, Berkeley*)

3:50 p.m.

(3437) Decay of Dose Rates Surrounding Commercial Spent Nuclear Fuel

Jabo S. Tang (*Independent*), John H. C. Wang (*URS*)

(15 minute break: 4:15-4:30 P.M.)

Technical Sessions

4:30 p.m.

(3562) Technologies for Monitoring Containers of Highly Radioactive Nuclear Material

Dennis L. Mangan, Markku J. Koskelo, Michael A. Ondrik, Steven P. Kadner (*Aquila Technologies*)

Track 3, Session 6: Engineered Barriers: Modeling Near Field Conditions

Session Organizers: David Pickett (*CNWRRA*), Frank Garisto (*NWMO*),

Asadul Chowdhury (*CNWRRA*)

Session Chairs: Lara Duro (*Amphos 21*), Scott Painter (*LANL*)

Grand Salon G/H

3:00 p.m.

(3465) Radionuclide Release in Performance Assessment Under Future Waste Management Scenarios

David A. Pickett (*CNWRRA*), Tae Ahn (*NRC*)

3:25 p.m.

(3288) Calculation of pH Inside a Breached Waste Package

Paul E. Mariner, Yifeng Wang (*SNL*), Paul S. Domski (*S. M. Stoller*)

3:50 p.m.

(3329) Thermal Performance of a Generic High-Level Waste Salt Repository

D. J. Clayton (*SNL*)

(15 minute break: 4:15-4:30 P.M.)

4:30 p.m.

(3360) Disturbed Zone Evolution Around a Geological Repository for Nuclear Waste

Liz Harvey (*Galson Sciences Ltd*), Philippe Van Marcke (*SCK•CEN*), Clive Kent, Steve Wickham (*Galson Sciences Ltd*), Maarten Van Geet, Xavier Sillen (*ONDRAF/NIRAS*)

4:55 p.m.

(3469) Modeling of Coupled Geomechanical Processes Associated With Bentonite-Backfilled Repository Tunnels in Clay Formations

J. Rutqvist, J. T. Birkholzer, J. Houseworth, H. H. Liu (*LBNL*)

5:20 p.m.

(3511) Potential Microbial Effects on Near-Field Chemistry for Alternative Waste Management Scenarios

Jude McMurry (*CNWRRA*)

Track 6, Session 5: Used Fuel Management Programs and Planning

Session Organizers: Charles McCombie (*Arius*),

Bob Gamble (*NYE County, Nevada*)

Session Chairs: Ken Sorenson (*SNL*), Erik Kremer (*NWMO*)

Grand Salon I/J

3:00 p.m.

(3382) Nuclear Fuel Cycle Management in Emerging Nuclear Countries

Lance Kim, Joonhong Ahn (*Univ of California, Berkeley*), Jorshan Choi (*Univ of Tokyo*), Yongsoo Hwang (*Center for Strategic and International Studies*),

Per F. Peterson (*Univ of California, Berkeley*)

3:25 p.m.

(3394) Role of Flexible Design in Staged Development of Repositories for Spent Nuclear Fuel and High-Level Waste

Jeffrey R. Williams (*DOE*), Thomas A. Cotton (*Complex Systems Group LLC*), Rob F. Rechard (*SNL*)

3:50 p.m.

(3471) Used Fuel and HLW Management Programs in Different Countries

Michael Stenhouse, Michael Apted, Wei Zhou (*INTERA Inc.*), Andrew Sowder, John Kessler (*EPRI*)

(15 minute break: 4:15-4:30 P.M.)

4:30 p.m.

(3340) Office of Fuel Cycle Technologies, Used Fuel Disposition Campaign Objective, Mission, Plans, and Activity Status

Mark Nutt, Mark Peters (*ANL*), Peter Swift, Kevin McMahon, Ken Sorenson (*SNL*), Patrick Schwab (*DOE*)

4:55 p.m.

(3464) Integrated Waste Management System for Spent Nuclear Fuel and High-Level Waste

Rob P. Rechard (*SNL*), James A. Blink, William G. Halsey (*LLNL*), Thomas A. Cotton (*Complex Systems Group*)

THURSDAY, APRIL 14, 2011, 8:30 A.M. – 11:35 A.M.

(25 minute break at 9:45 A.M.)

Track 1, Session 5: Approaches for Conceptual Model Uncertainty

Session Organizers: Peter Swift (*SNL*), Matt Kozak (*INTERA, Inc.*),

George Danko (*Univ of Nevada, Reno*)

Session Chairs: Matt Kozak (*INTERA*), Francis D. Hansen (*SNL*)

Grand Salon F

8:30 a.m.

(3429) Yucca Mountain 2008 Performance Assessment: Incorporation of Seismic Hazard Curve Uncertainty

Jon C. Helton, Cédric J. Sallaberry (*SNL*)

8:55 a.m.

(3328) Model-Based Decision Making: A New Perspective

John Doherty (*Flinders Univ*), Scott C. James (*SNL*), Paul W. Reimus (*LANL*)

9:20 a.m.

(3378) Comparisons of Release Probabilities Obtained in Recent WIPP Performance Assessments

R. Chris Camphouse, Daniel J. Clayton, Moo Y. Lee (*SNL*)

10:10 a.m.

(3383) Performance Confirmation Monitoring

F. D. Hansen (*SNL*)

10:35 a.m.

(3364) A Quantitative Risk Assessment Description of a Radionuclide Source Term

Bruce E. Kirstein (*NWTRB*), B. John Garrick (*NWTRB/Independent Consultant*), William M. Murphy (*NWTRB/California State Univ*)

Track 7, Session 2: DOE Nuclear Energy (NE) Program for Long Term Storage

Session Organizers: Vincenzo Rondinella (*ITU*), Brady Hanson (*PNL*)

Session Chairs: Nigel Mote (*NWTRB*), Andrew Sowder (*EPRI*)

Grand Salon A/B

8:30 a.m.

(3526) Overview of the DOE Program Supporting the Very Long Term Storage and Transportation of Used Nuclear Fuel

Ken B Sorenson (*SNL*)

Technical Sessions

8:55 a.m.

(3529) Extended Storage of Used Nuclear Fuel: Objective, Methodology and Evaluation Criteria

Abdelhalim A. Alsaed (*Enviro Nuclear Services*)

9:20 a.m.

(3454) Security for Very Long-Term Storage of Used Fuel

Felicia A. Durán, Gregory D. Wyss (*SNL*)

10:10 a.m.

(3585) Research and Development Needs for Very Long Term Storage: Used Fuel and Cladding

Brady D. Hanson (*PNNL*)

10:35 a.m.

(3528) Extended Storage of Used Nuclear Fuel: Research and Development Needs for Neutron Poisons and Shields

Abdelhalim A. Alsaed (*Enviro Nuclear Services*)

11:00 a.m.

(3535) Research Needs for Extended Storage of Used Nuclear Fuel: Container and Overpack

Christine T. Stockman, David G. Enos (*SNL*)

Track 8, Session 4: Alternate Waste Forms

Session Organizer: Joonhong Ahn (*Univ of California, Berkeley*)

Session Chairs: Tae Ahn (*NRC*), Mick Apted (*INTERA*)

Grand Salon C/D

8:30 a.m.

(3371) Potential Impacts of Alternative Waste Forms on Long-Term Performance of Geological Repositories for Radioactive Waste

Clifford W. Hansen, Peter N. Swift, Ernest Hardin,

Robert J. MacKinnon, David Sassani, S. David Sevougian (*SNL*)

8:55 a.m.

(3705) Numerical Evaluation of Super-Compacted Radioactive Waste

S. Schneider (*Forschungszentrum Jülich GmbH*),

H. Tietze-Jaensch (*Forschungszentrum Jülich GmbH/*

Produktkontrolle für Radioaktive Abfälle), D. Bosbach,

R. Odoj (*Forschungszentrum Jülich GmbH*)

9:20 a.m.

(3386) Iodine Capture in Silver-Loaded Zeolites and Metal Organic Frameworks and Storage in Novel Low Temperature GCM Waste Forms

James L. Krumhansl, Tim Nenoff, Dorina Sava, Terry Garino,

Davie Rademacher (*SNL*), Karena W. Chapman, Peter J. Chupas (*ANL*)

Track 6, Session 4: Used Fuel Management Policy Issues

Session Organizers: Charles McCombie (*Arius*),

Robert Gamble (*NYE County, Nevada*)

Session Chairs: Leif G. Eriksson (*Nuclear Waste Disposition*),

Robert Gamble (*NYE County, Nevada*)

Grand Salon G/H

8:30 a.m.

(3443) The Dynamics of Technical Communities Through the Multiple Phases of a Nuclear Waste Management Project

Hank Jenkins-Smith, Carol Silva, Tim Davidson (*Univ of Oklahoma*),

Evaristo J. (Tito) Bonano (*SNL*)

8:55 a.m.

(3211) Deep Geological Repositories—Really Necessary?

Christopher M. Timm, Cassandra Mueller (*PECOS Management Services, Inc.*)

(25 minute break: 9:45 A.M. – 10:10 A.M.)

THURSDAY, APRIL 14, 2011, 10:10 A.M. – 11:35 A.M.

Track 2, Session 1: Site Characterization Techniques and Facilities

Session Organizers: Stratis Vomvoris (*Nagra*), Jude McMurry (*CNWRA*),

Scott James (*SNL*)

Session Chairs: Bill Arnold (*SNL*), Douglas B. Rigby (*NWTRB*)

Grand Salon I/J

10:10 a.m.

(3520) Methodology for Early-Stage Site Evaluation in Japan and Technical Challenges

Junichi Goto, Ryuta Hataya, Kimitaka Yoshimura, Hirofumi Moriya,

Hiroyuki Tsuchi (*NUMO*)

10:35 a.m.

(3317) Hydrogeology Associated with the Waste Isolation Pilot Plant

Kristopher L. Kuhlman, Kevin S. Barnhart (*SNL*)

11:00 a.m.

(3583) Influence of Cavities on Mechanical Properties of Tuff-Like Rock

Douglas B. Rigby (*NWTRB*), Moses Karakouzian,

James A. Nott (*Univ. of Nevada Las Vegas*)

11:25 a.m.

(3537) Nagra's Activities in the URLs in Switzerland: Update and Outlook

S. Vomvoris, I. Blechschmidt, T. Vietor, L. Johnson (*Nagra*)

Track 10, Session 2: Security, Safeguards, and Non-Proliferation—II

Session Organizers: Al Aziz Eddebarh (*ENEC*), Erik Kremer (*NWMO*)

Session Chairs: Markku Koskelo (*Aquila Technologies*),

Robert Angelo Borrelli (*U. of California, Berkeley*)

Cimarron

10:10 a.m.

(3453) Assurance of Non-Proliferation for Pyro-Processing

Yongsoo Hwang (*CSIS/KAERI*), Kwangseok Lee (*KAERI*)

10:35 a.m.

(3502) Nuclear Material Attractiveness: An Assessment of Used-Fuel Assemblies

Charles G. Bathke, Paul G. Edelmann (*LANL*), Bartley B. Ebbinghaus,

Brad W. Sleaford (*LLNL*), Brian A. Collins (*PNNL*), Kevin R. Hase (*LANL*),

Martin Robel (*LLNL*), Andrew W. Prichard, Brian W. Smith (*PNNL*)

11:00 a.m.

(3584) A Comparison of the Isotopic Characteristics of WG-MOX and UO_x Fuel in Extended Dry Storage

A. Mendez Torres, D. W. Vinson, S. Branney (*SRNL*)

THURSDAY, APRIL 14, 2011, 11:30 A.M. – 1:00 P.M.

Box Lunch Social

THURSDAY, APRIL 14, 2011, 1:00 P.M.

CONFERENCE ADJOURNS

Technical Tour

Technical Tour: Waste Isolation Pilot Plant (WIPP) Sponsored by Sandia National Laboratories

[Please note the tour is fully booked; the following information is for those people registered for the tour]

Date: Thursday April 14, 2011 – Friday April 15, 2011

April 14

Board the “Follow the Sun” motor coach at the Albuquerque Marriott Uptown 12:30pm

Bus will depart 1:00pm

Travel to Carlsbad, NM 1:00pm – 5:00pm

Check in to hotel room at the Holiday Inn Express (hotel is included in tour cost) 5:00pm – 6:00pm

Board bus for group dinner (dinner is included in the tour cost) 6:30pm – 8:00pm

April 15

Board the motor coach 7:00am

Travel to WIPP Site 7:30am – 8:00am

WIPP Tour 8:00am – 12:00pm

Board bus for lunch and return to Albuquerque (lunch is included in the tour cost) 12:00pm – 1:00pm

Travel to Albuquerque 1:00pm – 5:00pm