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Integrating Storage, Transportation, and Disposal

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(7003) Onset and Stability of Natural Convection in Deep Boreholes 762
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Track 8, Session 4: Advanced Fuel Cycles: Impacts on Waste Management

Organizers: Joonhong Ahn (Univ of California Berkeley), Jongwon Choi (KAERI)

Chair: Jongwon Choi (KAERI)

(6702) Why We Can't Predict Future Fuel Cycles: Implications for Waste Management and Repository Design 777
Charles Forsberg (MIT)

(6847) Are Fast Reactors Necessary for Full Actinide Recycle? 783
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(6922) A Practical Path Forward for U.S. Used Nuclear Fuel 790
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Wednesday, May 1, 2013, 1:30 PM–2:50 PM

Track 1, Session 5: Total Repository System (Generic and Site-Specific)

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

Cochairs: G. Freeze (SNL), D. Sevougian (SNL)

(6945) Disposal of Heat-Generating Nuclear Waste in Salt—Recent Activities and Future Plans 793
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(6992) Used Fuel Security—Prioritized Issues, R&D Needs, Best Practices, and Security Risk Analysis for Extended Storage 801
Felicia A. Durán, Gregory D. Wyss (SNL), Scott DeMuth (LANL), James A. Blink (LLNL)

Track 2, Session 7: Natural Systems for Disposal (Generic and Site-Specific)

Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)

Chair: Stratis Vomvoris (NAGRA)

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(7021) Morphology of Plutonium Precipitates in the Presence of Goethite at 25 and 80°C **816**

M. Zavarin, P. Zhao, Z. R. Dai, S. A. Carroll, A. B. Kersting (LLNL)

Track 7, Session 9: Storage of Used Nuclear Fuel and High Level Waste

Organizers: Brady Hanson (PNNL), Vincenzo Rondinella (EC-JRC-ITU)

Chair: Holger Voelzke (BAM)

(6845) Impacts Associated with Early Transfer of Spent Fuel to Dry Storage **822**

Eileen M. Supko (Energy Resources International, Inc.), Keith Waldrop (EPRI)

(6857) Two-Dimensional CFD Simulations of a Square 8x8 Heater Rod Array in an Isothermal Enclosure Filled with Rarified Air **831**

Miles Greiner, Pablo Araya, N. R. Chalasani (Univ of Nevada, Reno), Jie Li, Yung Liu (ANL)

(6895) The Effect of Weld Residual Stress on Life Prediction of Used Fuel Storage Canister Material **841**

B. P. Black, R. G. Ballinger, S. E. Ferry (MIT), S. Teyseyre (INL)

(6912) Assessment of Available Techniques for the Interim Storage of AGR Fuel **849**

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)

(6846) Modelling Container Failure in a Canadian Deep Geologic Repository **854**

Mark Gobien, Frank Garisto (NWMO)

(6896) Sorption of Neptunium on Graphite under Potential Repository Conditions **862**

C. Keith, M. Kalagorgevich, R. Springs, G. S. Cerefice (UNLV)

(6921) Effects of Chemical Solution Conditions on Uranium(VI) Diffusion in Clays **867**

Ruth M. Tinnacher, James A. Davis (LBNL)

(7029) Coupled THMC Ventilation Model Tasks for Integrated, High-Capacity SNF Management **875**

George Danko, Davood Bahrami (Univ of Nevada, Reno)

Track 6, Session 2: Institutional Topics (With Emphasis on Lessons Learned)

Organizer: Charles McCombie (MCM Consulting)

Cochairs: Mick Apted (Intera, Inc.), Ray Clark (EPA)

(6842) The Technical Stability of the Swedish Nuclear Fuel Safety Program **884**

Thomas Kaiserfeld (Lund Univ)

(6897) Planning an Integrated Waste Management Strategy for New Nuclear **893**

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Charles McCombie, Neil Chapman, Wolfgang Kickmaier, Ellie Scourse (MCM Consulting)

(6898) Progress with Multinational Disposal Initiatives **901**

Charles McCombie, Neil Chapman (Arius Association), Ewoud Verhoef (COVRA)

(6874) Technology Transfer—Identification and Quantification of Potential Benefits **905**

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)

(6958) THM Coupling Analysis of Korea Research Teams for Task B of the International Cooperation Project, DECOVALEX **912**

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Wednesday, May 1, 2013, 3:10 PM–4:50 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)

Cochairs: O. Pensado (CNWRA), Matt Kozak (Intera, Inc.)

(6950) Independent Modelling in SSM's Licensing Review **918**

Shulan Xu, Björn Dverstorp, Maria Nordén (Swedish Radiation Safety Authority)

(6966) Wireless Data Transmission from Deep Geological Disposal Facilities to the Surface **925**

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)

(7007) Using the Disposal Systems Evaluation Framework to Evaluate Design Tradeoffs **931**

Harris R. Greenberg, James A. Blink, Montu Sharma (LLNL)

(7022) SNF Disposal Concepts for Small and Large Waste Packages **939**

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)

(6796) Diffusion of Cesium in Compacted Bentonite with Different Column **947**

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)

Track 6, Session 3: Institutional Topics (With Emphasis on Lessons Learned)

Organizer: Charles McCombie (MCM Consulting)

Cochairs: Ray Clark (EPA), Charles McCombie (MCM Consulting)

(6841) Cigéo, the French Geological Repository Project 954

T. Labalette, A. Harman, M. C. Dupuis, G. Ouzounian (ANDRA)

(6844) URLs in European Programs for High Level Waste Disposal—How Used? 959

Kimitaka Yoshimura (NUMO), Irina Gaus (NAGRA), Kenichi Kaku (NUMO), Stratis Vomvoris (NAGRA)

(6933) Geological Disposal and Site Selection in Switzerland—Accomplishments and Outlook 967

Thomas Ernst, Efstratios (Stratis) Vomvoris, Anne Claudel (NAGRA)

(6938) The Strategic Role of Underground Rock Laboratories in a Geological Disposal Programme 974

Wolfgang Kickmaier, Charles McCombie, Ian G. McKinley, Ellie M. Scourse (MCM Consulting)

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)

(6838) Logistical Simulation of Spent Nuclear Fuel Disposal in a Salt Repository with Low Temperature Limits 980

E. A. Kalinina, E. L. Hardin (SNL)

(6851) Integrated Modeling of Spent Nuclear Fuel Management Stages 989

Oswaldo Pensado, Sitakanta Mohanty (CNWRA), Keith Compton (NRC), E. Lynn Tipton, Razvan Nes, Patrick LaPlante (CNWRA)

(6861) An Auxiliary System to Monitor the Key Environmental Variables in Spent Fuel Pool at the Loss of Power Accident 995

Chan Hee Park, Jung Min Lee, Arim Lee, Joo Hyun Moon (Dongguk Univ), Wook Jae Yoo, Bong Soo Lee (Konkuk Univ), Sung Kyu Shin (Korea Radioactive Waste Management Corp)

(6866) Thermal Modeling Studies for Active Storage Modules in the Calvert Cliffs ISFSI 999

Harold E. Adkins, Jr., James A. Fort, Sarah R. Suffield, Judith M. Cuta, Brian A. Collins (PNNL)

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)

(7185) Familiarity as Key to Public Acceptance of Used Nuclear Fuel Facilities 1005

Ann S. Bisconti (Bisconti Research, Inc.)

(7186) Consent-Based Siting: What We Have Learned 1009

Daniel Metlay (U.S. Nuclear Waste Technical Review Board)

(7234) Siting of Radioactive Waste Disposal Facilities—A Synthesis of International Learning 1020

Claudio Pescatore (OECD/NEA)

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Track 4, Session 2: Biosphere

Organizer: Andrew Sowder (EPRI)

Chair: Nava Garisto (SENES Consultants)

(6959) Uncertainties in Doses from Agricultural Ecosystems Following Conversion from Wetlands 1024

R. A. Klos (Aleksandria Sciences Ltd), Anders Wörman (KTH)

(6709) Continental-Shelf Seabed Disposal: Disposal of Non-Repository Radioactive Wastes for a World of 10 Billion People 1032

Charles Forsberg (MIT)

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

Organizers: Jude McMurry (CNWRA), Stratis Vomvoris (NAGRA)

Chair: Stratis Vomvoris (NAGRA)

(6918) Underground Salt Research Laboratory at the Waste Isolation Pilot Plant 1039

F. D. Hansen (SNL)

(6919) An Overview of U.S. Disposal Research Activities Linked to International URLs 1047

Jens Birkholzer, Daisuke Asahina, Fei Chen (LBNL), Payton Gardner (SNL), James Houseworth (LBNL), Carlos Jové-Colón (SNL), Annie Kersting (LLNL), Prasad Nair (DOE), Lianchong Li, Hui-Hai Liu (LBNL), Scott Painter, Paul Reimus (LANL), Jonny Rutqvist, Carl Steefel (LBNL), Mark Tynan (DOE), Yifeng Wang (SNL), Mavrik Zavarin (LLNL)

(6971) KURT (KAERI Underground Research Tunnel) Activities for HLW Disposal Technology Development in Korea 1055

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)

(7081) NUHOWS Storage and Transportation of Irradiated Reactor Components and High Level Waste in Large Packages 1062

Glen A. Rae (Transnuclear)

(6979) Production of Simulated High-Burnup Used Fuel Cladding in the HFIR 1070

R. H. Howard, Y. Yan, R. L. Howard, J. L. McDuffee, L. J. Ott (ORNL)

(6983) Test System for Evaluating Spent Nuclear Fuel Bending Stiffness and Vibration Integrity 1075

J-A. Wang, H. Wang, B. B. Bevard, R. L. Howard (ORNL), M. E. Flanagan (NRC)

(7018) Microstructure and Macroscopic Alteration Affecting Nuclear Fuel During Extended Storage 1083

Vincenzo V. Rondinella, Thierry Wiss, Dimitrios Papaioannou, Ramil Nasyrow (EC-JRC-ITU)

Track 8, Session 6: Advanced Fuel Cycles: Impacts on Waste Management

Organizers: Joonhong Ahn (Univ of California, Berkeley), Jongwon Choi (KAERI)

Chair: Don McGee (AREVA)

(6884) Study of Unfolding Method to Determine Pin-Wise Source Strength Distribution 1089

Yos Panagaman Sitompul, Hee-Sung Shin, Se-Hwan Park, Oh Jong Myeong, Seo Hee, Ho-Dong Kim (KAERI)

(6885) Development of Axial Burnup Measurement System for PWR Spent Fuel Assembly 1095

Hee-Sung Shin, Yos Panagaman Sitompul, Se-Hwan Park, Oh Jong Myeong, Seo Hee, Ho-Dong Kim (KAERI)

(6889) Data Mining to Determine Inventory Characteristics of Used Nuclear Fuel for Potential Future Recycling Campaigns 1100

Josh Peterson (ORNL)

Track 9, Session 2: High-Level Radioactive Waste Transportation

Organizer: Ruth Weiner (SNL)

Chair: Ruth Weiner (SNL)

(6973) Effects of Drying and Storage on High-Burnup Cladding Ductility 1106

M. C. Billone, T. A. Burtseva, Y. Y. Liu (ANL)

(6862) Modeling of Cylindrical Casks Under Horizontal Drop Test Conditions 1114

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(6888) Investigating the Performance of Rubber Seals at Low Temperatures 1120

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