



CELEBRATING  
**40** YEARS!

# WWM 2014 Symposia

40 YEARS OF MEETING GLOBAL RADIOACTIVE WASTE MANAGEMENT CHALLENGES



**MARCH 2 – 6, 2014**  
**PHOENIX CONVENTION CENTER**  
**PHOENIX, ARIZONA, USA**

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40 Years of Meeting Global Radioactive Waste Management Challenges

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# WM2014 SCHEDULE OF EVENTS

All Sessions will take place at the Phoenix Convention Center – West Building unless noted otherwise.

All Buses for Off-Site Events & Tours will load from the Hyatt Regency Phoenix – Monroe Street exit.

## **SATURDAY, MARCH 1, 2014**

7:00 a.m. – 8:00 p.m. Guest/Attendee Tour – Grand Canyon\*  
8:00 a.m. – 5:00 p.m. Registration Open – *Lower Level, Exhibit Hall*  
4:30 p.m. – 6:00 p.m. Individual PAC Meetings by Track – *Hyatt Regency Phoenix*  
6:00 p.m. – 9:30 p.m. PAC Meeting and Dinner – *Hyatt Regency Phoenix*

## **SUNDAY, MARCH 2, 2014**

8:30 a.m. - 3:00 p.m. WMS Board of Directors Meeting – *Hyatt Regency Phoenix*  
9:00 a.m. – 4:30 p.m. Roy G. Post Foundation Fundraising Golf Tournament\* – *Raven Golf Course*  
9:00 a.m. - 3:00 p.m. Managing Projects Workshop\* – *Level One, 106C*  
10:00 a.m. - 2:00 p.m. Guest/Attendee Tour – Desert Hike\*  
10:30 a.m. - 2:30 p.m. Guest/Attendee Tour – Desert Botanical Garden Tour\*  
11:00 a.m. - 5:00 p.m. Critical Decisions Workshop\* – *Level One, 106B*  
1:00 p.m. - 8:00 p.m. Registration Open – *Lower Level, Exhibit Hall*  
3:00 p.m. - 4:00 p.m. First Time Attendee/PAC Orientation – *Level One, 101B*  
4:00 p.m. – 4:45 p.m. International PAC Meeting – *Level One, 102A*  
4:00 p.m. - 4:45 p.m. Student Assistant Training – *Level One, 101C*  
5:00 p.m. - 8:00 p.m. Welcome Reception & Exhibit Hall Open – *Lower Level, Exhibit Hall*

## **MONDAY, MARCH 3, 2014**

7:00 a.m. - 8:00 a.m. Speaker's Breakfast – *Level Three, 301A*  
7:00 a.m. - 6:00 p.m. Registration Open - *Lower Level, Exhibit Hall*  
7:30 a.m. - 11:00 a.m. ASME Radwaste System Committee Meeting – *Cowboy Artist's Room, Hyatt Regency Phoenix*  
8:00 a.m. - 10:00 a.m. Guest Program Continental Breakfast\* - *Sundance Room, Hyatt Regency Phoenix*  
8:00 a.m. – 9:45 a.m. Opening Plenary Session – *Level Three, 301BD*  
8:30 a.m. - 6:30 p.m. Exhibit Hall Open – *Lower Level*  
9:30 a.m. - 4:00 p.m. Guest/Attendee Tour – Shopping at the Outlets at Anthem & Old Town Scottsdale\*  
10:00 a.m. - 5:00 p.m. Technical Sessions 2 – 30 – *Level One*  
12:00 p.m. - 1:15 p.m. Keynote Luncheon – *Level Three, 301BD*  
1:30 p.m. - 5:00 p.m. Student Poster Competition Session 31 – *Lower Level, Exhibit Hall*  
2:30 p.m. - 3:00 p.m. Refreshment Break – *Lower Level, Exhibit Hall*  
5:00 p.m. - 6:30 p.m. International Welcome Reception - *Lower Level, Exhibit Hall*  
6:00 p.m. - 7:30 p.m. Students and Young Professionals Networking Reception – *Level Two, 212BC*

## **TUESDAY, MARCH 4, 2014**

7:00 a.m. - 8:00 a.m. Speaker's Breakfast – *Level Three, 301A*  
7:00 a.m. - 6:00 p.m. Registration Open - *Lower Level, Exhibit Hall*  
8:00 a.m. - 10:00 a.m. Guest Program Continental Breakfast\* - *Sundance Room, Hyatt Regency Phoenix*  
8:30 a.m. - 5:00 p.m. Technical Sessions 32 - 67 – *Level One*  
9:00 a.m. - 6:30 p.m. Exhibit Hall Open - *Lower Level*  
11:30 a.m. - 3:30 p.m. Guest/Attendee Tour – Lunch & tour of the Musical Instrument Museum (The MIM)\*  
12:00 p.m. - 1:15 p.m. Honors & Awards Luncheon – *Level Three, 301BD*  
2:30 p.m. - 3:00 p.m. Refreshment Break – *Lower Level, Exhibit Hall*  
5:00 p.m. - 6:30 p.m. Best of Finland & Sweden Reception - *Lower Level, Exhibit Hall*  
6:00 p.m. - 7:30 p.m. Women of Waste Management (WoWM) Panel & Networking Reception – *Level Two, 212BC*  
6:15 p.m. – 10:30 p.m. Guest/Attendee Tour – Phoenix Coyotes vs. Vancouver Canucks\*

## **WEDNESDAY, MARCH 5, 2014**

7:00 a.m. - 8:00 a.m. Speaker's Breakfast – *Level Three, 301A*  
7:00 a.m. - 6:00 p.m. Registration Open - *Lower Level, Exhibit Hall*  
8:00 a.m. - 10:00 a.m. Guest Program Continental Breakfast\* - *Sundance Room, Hyatt Regency Phoenix*  
8:30 a.m. - 5:00 p.m. Technical Sessions 68 - 98 – *Level One*  
9:00 a.m. - 6:30 p.m. Exhibit Hall Open - *Lower Level*  
11:30 a.m. - 3:30 p.m. Guest/Attendee Tour – Afternoon Tea & Tour of the Desert Botanical Garden\*  
2:30 p.m. - 3:00 p.m. Refreshment Break – *Level One Foyer*  
6:30 p.m. - 9:00 p.m. Networking Reception & Dinner – *The Heard Museum\* (Buses begin loading at 6:00 p.m. at Hyatt)*

## **THURSDAY, MARCH 6, 2014**

7:00 a.m. - 8:00 a.m. Speaker's Breakfast – *Level Two, 211AB*  
7:00 a.m. - 5:00 p.m. Registration Open – *Level One, 101A*  
8:00 a.m. - 10:00 a.m. Guest Program Continental Breakfast\* - *Curtis AB Room, Hyatt Regency Phoenix*  
8:30 a.m. - 12:00 p.m. Technical Sessions 99 - 127 – *Level One*  
1:30 p.m. - 5:00 p.m. Mgmt of Radioactive Waste Following a Nuclear Accident Panel\* – Session 112 – *Level One*  
5:00 p.m. - 6:00 p.m. Mgmt of Radioactive Waste Panel Reception – *Level One Foyer*

## **FRIDAY, MARCH 7, 2014**

7:00 a.m. - 10:30 a.m. WM2015 PAC Meeting and Breakfast – *Hyatt Regency*  
8:00 a.m. - 1:00 p.m. US NRC Public Workshop on Low-Level Radioactive Waste Disposal Rulemaking & Strategic Assessment – *Renaissance Phoenix Downtown Hotel, Salons 7 & 8*

\* - **Separate Registration Fees Apply; Schedule Subject to Change**



## 40 YEARS OF MEETING GLOBAL RADIOACTIVE WASTE MANAGEMENT CHALLENGES

It gives me great pleasure to welcome you to the 40th Annual Waste Management Conference, WM2014.

As the premier international conference for the management of radioactive materials and related topics, WM2014 will convene at the Phoenix Convention Center (PCC) from March 2 - 6, 2014.

With almost two thousand scientists, engineers, managers and students representing the next generation, we have made it our mission to build a conference that explores best practices from around the world.

The technical program is comprehensive with over 500 papers and 127 technical sessions and panels which are complemented by an extensive exhibition. This year's conference promises to have several exciting topics. We are especially proud to have Finland and Sweden as our featured countries to detail recent developments and ambitious plans for the future throughout the world.

On Thursday, March 6, 2014; WMS is proud to present a topical session entitled "**Management of Radioactive Waste Following a Nuclear Accident or Extreme Contamination Scenario**".

This Thursday afternoon featured panel will focus on the remediation, decommissioning and related waste management aspects following a major nuclear accident or cleanup of an extreme contamination scenario. The panel will also address the crises communication which took place during these events as well as communication with the public in general during nuclear accidents or contamination events.

The panel will address the following sites: Three Mile Island Nuclear Power Plant (NPP), Chernobyl NPP (Ukraine), Fukushima NPP (Japan), Windscale Pile I (United Kingdom) and the Rocky Flats Infinity Rooms remediation.

On Friday March 8, the US NRC will conduct a public meeting immediately following the annual WM2014, Conference. The meeting will be held from 8:00 am - 1:00pm at the Sheraton Phoenix Downtown Hotel. The purpose of the public meeting is to discuss the status of proposed revisions to the U.S. Nuclear Regulatory Commission's (NRC's) Low-Level Radioactive Waste (LLRW) disposal regulations.

All are welcome to attend, including waste generators, processors, disposal facility operators, States, LLW Compacts, advocacy groups and members of the public. Although this meeting is not a part of the WM2014 Conference, it is being held the day after the conference ends to facilitate attendance and participation by members of the waste industry and other stakeholders who have an interest in the subject.

The aim of the WM Board and the Program Advisory Committee is to host an interesting, stimulating and informative program. If you have ideas on how to improve the conference, please let us know.

I would like to thank the WM team for their efforts and our sponsors for their contributions that enhance what we can accomplish. Thanks also to our attendees and exhibitors who make the conference so exciting.

We are a non-profit organization with the aim of promoting education and opportunity and your participation helps us to further these objectives.

I hope you have a very profitable time.

James Fiore  
President - WM Symposia

# MEETING CONTACTS

## WMS OFFICERS AND DIRECTORS

### WMS Meeting Planning Team

**Conference Manager - Mary E. Young, CMP**  
E: mary@wmarizona.org

**Meeting Planner - Melanie Ravalin, CMP**  
E: melanie@wmarizona.org

**Exhibits, Sponsorships & Registration - Jaclyn Russell**  
E: exhibits@wmarizona.org  
E: onlinereg@wmarizona.org

**Technical Papers - Amanda Tompkins**  
E: papers@wmarizona.org

**Lodging Coordinator - Sherry Chavez**  
E: sherry@aquilatavel.com  
V: +1 800-595-6257

**Managing Director - James W. Voss**  
E: jamesvoss@wmarizona.org

**Deputy Managing Director & Program Advisory Committee (PAC) Chair - Gary A. Benda**  
E: gbenda@wmarizona.org  
V: +1 803-345-2170

**Deputy PAC Chair & Conference Newsletter "Insight" Editor - Linda Lehman**  
E: llehman@wmarizona.org  
V: +1 612-867-9725

### WMS Mailing Address

1628 E. Southern Avenue, Suite 9-332  
Tempe, AZ 85282 USA  
V: +1 480-557-0263  
F: +1 520-829-3550

### WMS Corporate Officers/ Executive Committee

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**George Dials**, B&W Conversion Services, LLC  
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**Hiroshi Kuribayashi**, Consultant, Japan

**Takao Nakajima**, JAIF & Kurihalant Co., Ltd., Japan

**Robert F. Williams**, WTA, Inc.

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## PAC Chair/Deputy Managing Director

Gary Benda, *WM Symposia*

## Deputy PAC Chair

Linda Lehman, *Consultant*

## PAC Representative

W.T. (Sonny) Goldston, *EnergySolutions*

## Track Co-Chairs & Track Number

**Kim Auclair**, *KD Auclair & Assoc.* - 9

**Harry Babad**, *Author & Consultant* - 2

**Del Baird**, *Pro2Serve* - 7

**Gabriele Bandt\***, *TÜV NORD EnSys Hannover* - 3

**Tom Brouns**, *PNNL* - 2

**John Coffman**, *ReNuke Svcs* - 1

**Judith Connell**, *Fluor Govt Group* - 8

**John Dalton\***, *UK NDA* - 8

**Jas Devgun**, *Sargent & Lundy* - 6

**Al Freitag**, *Mitsubishi Nuclear Energy Systems* - 6

**W.T. (Sonny) Goldston**, *EnergySolutions* - 8

**Bob Hiergesell**, *SRNL* - 3

**Guenter Hillebrand\***, *Nuclear Engineering Seibersdorf GmbH* - 9

**Angie Jones**, *AMEC* - 1

**Paul Jones**, *DeNuke Svcs* - 5

**John Kristofzski**, *CH2M HILL, Inc.* - 7

**Mark Lewis**, *EnergySolutions* - 4

**John Mathieson\***, *UK NDA* - 1

**Stephen O'Connor**, *US DOE* - 5

**C. Clint Miller**, *PG&E* - 4

**Keith Miller\***, *Natl Nuclear Lab* - 2

**Roger Nelson**, *US DOE* - 2

**Olaf Oldiges\***, *Daher-NCS* - 5

**Colleen Owens**, *DeNuke Svcs* - 3

**Fred Sheil\***, *Sheil Consulting, Ltd.* - 6

**Wolfgang Steinwarz\***, *Siempelkamp Nukleartechnik GmbH* - 4

**Joe Tarantino**, *USEC* - 9

**Tjalle "Chuck" Vandergraaf\***, *Consultant* - 7

## Additional PAC Members

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Sue Aggarwal, *New Millennium Nuclear Technologies*

Nithin Akuthota, *CRC Technologies*

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Enrique Biurrun\*, *DBE Technology GmbH*

Dick Blauvelt, *Portage, Inc.*

Elizabeth Bowers, *Consultant*

Paul Bredt, *PNNL*

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Lisa Burns, *Consultant*

Connie Callan, *Natl Educational Technology Solutions, LLC*

Larry Camper, *US NRC*

Chris Chadwick\*, *Porvair Filtration Group*

Grant Charters, *New Millennium Nuclear Technologies*

Michelle Claggett, *Project Enhancement Corporation*

Donald Clark, *DEC Enterprises*

Ray Clark, *US EPA*

Hans Codee\*, *COVRA N.V.*

Michael Connolly, *INL*

Rick Dearholt, *RIX, LLC*

Rick Demmer, *INL*

George Dials, *B&W Conversion Services*

Virginia (Ginger) Dickert, *Consultant*

Paul Dickman, *Argonne National Lab*

David Eaton, *CH2M-WG Idaho, LLC*

Robert Edmonds, *AREVA Federal Svcs*

Mike Eisenhower, *Materials & Energy Corporation*

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Kapila Fernando, *ANSTO*

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April Gil, *US DOE*

Sal Golub, *US DOE*

Kapil Goyal, *LANL*

Anja Graf\*, *WAK GmbH*

Rod Grebb, *Black Range Minerals*

John Greeves, *Talisman International*

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William Gregory, *Vinculum Marketing*

Karen Guevara, *Consultant*

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Daniel Jordan, *ENERCON Services, Inc*

Walter Josephson, *WorleyParsons Polestar*

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Eric Knox, *URS*

Stan Kosiewicz, *Los Alamos High Technology*

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Simon Kwong\*, *NNL*

Christian Ladirat\*, *CEA Marcoule*

Leonel Lagos, *FIU*

Christine Langton, *SRNL*

Martin Letourneau, *US DOE*

Maria Lindberg\*, *Studsвик Nuclear AB*

John Longenecker, *Longenecker & Assoc.*

Todd Lovinger, *LLW Forum, Inc.*

Con Lyras\*, *ANSTO*

Paul Macbeth, *US DOE*

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Sharon Marra, *SRNL*

Mark Matthews, *Matthews, Inc.*

Kent McDonald, *PNNL*

Jack McElroy, *McElroy Consulting*

Irena Mele\*, *IAEA*

Roger Merrick, *Engineering/Remediation Resources Group, Inc.*

Lance Mezga, *ORNL*

Sue Mitchell, *Consultant*

Sitakanta Mohanty, *Center for Nuclear Waste Regulatory Analyses*

Mike Nolan, *Lucas Eng. & Mgmt Svcs*

Michael Ojovan\*, *University of Sheffield*

Gérald Ouzounian\*, *Andra*

Corhyn Parr\*, *Nuclear Enterprise Ltd*

Bernard Poncet\*, *EDF-CIDEN*

Bob Popielarczyk, *CH2M HILL PRC*

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Larry Regens, *OU Health Sciences Center*

Michelle Rehmann, *HER Creative Solutions*

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Karlan Richards, *Bechtel National, Inc.*

Allen Roos, *USACE*

Nancy Rothermich, *Lawrence Berkeley National Laboratory*

Elizabeth Saris, *Leidos, Inc.*

Detlef Schmidt\*, *Nuclear Projects*

*Consultancy*

Malgorzata K. Sneve\*, *Norwegian*

*Radiation Protection Authority*

Mike Snyder, *MHF Services*

Holger Spann, *Siempelkamp Nuclear Services*

Sergey Stefanovsky\*, *SIA Radon*

Hans-Jürgen Steinmetz\*, *Forschungszentrum Jülich GmbH*

Roger Stigers, *PPL Susquehanna*

Karthik Subramanian, *SRR*

Linda Suttora, *US DOE*

Andrew Szilagyi, *US DOE*

Erich Tiepel, *Golder Associates, Inc*

Christopher Timm, *PECOS Mgmt Svcs*

Julia Tripp, *INL*

John Tseng, *Consultant*

Chi-Fung Tso, *ARUP*

Vanessa Vanover Hatfield, *E2 Consulting Engineers, Inc.*

Leo van Velzen\*, *NRG-Arnheim*

Robert Vellinger, *TerranearPMC, LLC*

James Voss, *Predicus, LLC*

Charles Waggoner, *Mississippi State University*

David Wallace, *Parsons Brinckerhoff*

Nelson Walter, *AMEC*

Susan Walter, *AECOM*

Wendell Weart, *Weart Consulting*

Kirste Webb, *PQC Solutions*

Julia Whitworth, *IAEA*

Terry Wickland, *Nuclear Filter Tech.*

William Wilmarth, *SRNL*

Donald Wood, *GaeaTech Services*

James Wright, *Rio Technical Services*

Chuan-Fu Wu, *ATL International*

Loong Yong, *Spectra Tech, Inc.*

Ming Zhu, *US DOE*

\*= International PAC Members

## International Program Advisory Committee (IPAC) Leaders

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**Andreas Roth**

**Tjalle Vandergraaf**

**Bernard Vigreux**

**Wolfgang Steinwarz**

**Ming Zhang**

**Kun Jai Lee**

**Esko Tusa**

**Leslie Jardine**

**Keith Miller**

# CONFERENCE REGISTRATION

## Onsite Registration Fees

Conference Registration	
Full Technical includes Thursday's Blue Ribbon Commission on America's Nuclear Future Panel/Workshop	\$1,250
PAC Members – Full Technical	\$1,250
2 Day Tech – Mon/Tues <b>or</b> Tues/Wed	\$1,100
1 Day Tech – Mon, Tues <b>or</b> Wed/Thurs	\$875
Full-Time Student – Full Technical	\$35
Exhibit Hall Only Registration	
Exhibit Hall Only – Sun - Wed	\$450
1 Day Only Exhibit Hall Pass – Mon <b>or</b> Tues	\$225
Professional Development Workshops	
Sunday Managing Projects Workshop	\$100
Sunday Critical Decisions Workshop	\$100
Management of Radioactive Waste Following a Nuclear Accident Panel/Workshop	
• Full Technical Registrants	<i>Included</i>
• Other Conference Registrants	\$125
• Workshop & Reception Only	\$225
Guest Program and Add-on Tickets	
Guest Program Registration	\$100
Lunch Ticket – Mon <b>or</b> Tues <b>or</b> Thurs	\$30 each
Lunch Ticket – Mon <b>&amp;</b> Tues <b>&amp;</b> Thurs <b>Save \$10</b>	\$60
Wednesday Evening Networking Event	\$35

## Registration Categories

**Full Technical Registration** includes four days of the conference, receptions, the Monday Keynote Lunch, Tuesday Awards Lunch, Wednesday Exhibit Hall lunch, Thursday lunch and workshops and online proceedings. *Please note the Wednesday evening event is a separate fee.*

**Two Day Technical Registration** includes two days of the conference, receptions, lunches and the online proceedings. You may register for Monday and Tuesday or Tuesday and Wednesday. If registering for Monday and Tuesday, the Sunday Evening Welcome Reception is also included. If registering for Tuesday and Wednesday, the Thursday sessions, workshops and lunch are included. *Please note the Wednesday evening event is a separate fee.*

**One Day Technical Registration** includes one day of the conference, reception, lunch and the online proceedings. If registering for Wednesday, the Thursday sessions, workshops and lunch are also included. *Please note the Wednesday evening event is a separate fee.*

**Student Registration** - see Full Technical Registration description. This category is open only to full-time students, 35 years of age or younger.

**Speakers/Panelists/Session Co-Chairs** - please note that all attendees must register in one of the listed categories. Speakers, Panelists, or Session Co-Chairs must have a Technical Registration badge.

**Full Week Exhibit Hall Only Registration** includes access to Exhibit Hall only, including refreshment breaks and receptions on Sunday, Monday and Tuesday evenings. Access only to technical sessions as specially noted in program schedule.

**One Day Only Exhibit Hall** includes access to the Exhibit Hall for that day including the refreshment breaks and evening reception. If registering for the Monday One Day Exhibit Hall Only, the Sunday Evening Welcome Reception is included. If registering for the Tuesday One Day Exhibit Hall Only, access to the Exhibit Hall Wednesday morning is also included.

**Guest Registration** includes Exhibit Hall access to the social events on Sunday, Monday and Tuesday evenings and Continental Breakfast Monday through Thursday at the Hyatt Regency Phoenix hotel.

Guests are defined as spouses and significant others and are **NOT BUSINESS ASSOCIATES!** Co-workers or associates in the industry do not apply.

Please note no one under the age of 18 years old is permitted to attend the conference or Exhibit Hall.

**Exhibitors** - conference registration fees are in addition to exhibitor booth fees. Most booth fees include complimentary registration badges; please refer to the Exhibitor Prospectus located on the website at [www.wmsym.org](http://www.wmsym.org).



# GENERAL CONFERENCE INFORMATION

## Registration Policies

The deadline for substitution requests or cancellation was February 15, 2014. Refunds will not be granted after that date; nor will they be given to no-shows. Once a check or credit card payment has been processed, the payment method cannot be changed.

## Ribbons

Please stop by the Registration Desk to collect your registration ribbons which include Presenter, Session Co-Chair, countries and more. Along with ribbons, you can also collect your Registration Bags which are sponsored by **CH2M HILL** and contain a variety of supplies sponsored by **AMEC**, **PACTEC** and **KURION**.

Thank you to **URS** for sponsoring the water bottles available outside the Exhibit Hall and for our presenters in the session rooms.

## Special Needs

WMS Staff will be glad to help with any special needs as best we can onsite. Please visit the Registration Desk for assistance.

## Translation Services

Should you need translation assistance during the conference, please visit the Registration Desk for assistance. WMS PAC Members who are multi-lingual have volunteered to assist others as needed. Please note that all WM2014 sessions are presented in English.

## Lost and Found

Please visit the Registration Desk for any lost and found items during the conference at the PCC.

## Emergencies at the Phoenix Convention Center (PCC)

Each meeting room at the PCC has a Security Monitor System that is a direct link to the Security department for emergencies.

If you smell smoke or see fire, summon help: Call House Security at **85** on the white house phone or +1 602-262-7271. Report the emergency, giving the location if possible and any other details.

Proceed to evacuate and *DO NOT* use the elevators.

## Medical Emergencies/First Aid at PCC

In case of a medical emergency, summon help: Call House Security at **85** on the white house phone or +1 602-262-7271. Report the emergency, giving the location if possible and any other details.

House Security will call 911.

Stay with the injured person until House Security arrives if possible.

The PCC is also equipped with Automated External Defibrillators (AED) throughout the building. An AED is a device about the size of a laptop computer that analyzes the heart's rhythm for any abnormalities and, if necessary, directs the rescuer to deliver an electrical shock to the victim.

## Hotel Accommodations

For onsite hotel assistance, visit Sherry Chavez at the Aquila Travel Desk in the Registration area, Lower Level of the PCC during registration hours. You may also reach her by phone at 800-595-6257 or email at [sherry@aquilatravel.com](mailto:sherry@aquilatravel.com).

Thank you to **B&W Technical Services Group, Inc.** for sponsoring the hotel key cards available at the Hyatt Regency Phoenix and Marriott Renaissance Phoenix Downtown.

### Hyatt Regency Phoenix

P: +1 602-252-1234  
122 North Second Street, Phoenix, AZ 85004

### Marriott Renaissance Phoenix Downtown

P: +1 602-333-0000  
50 East Adams Street, Phoenix, AZ 85004

### Sheraton Phoenix Downtown

P: +1 602-262-2500  
340 North Third Street, Phoenix, AZ 85004

### Hilton Suites Phoenix

P: +1 602-222-1111  
10 East Thomas Road, Phoenix, AZ 85012

### Holiday Inn Express Hotel Phoenix Downtown

P: +1 602-452-2020  
620 North Sixth Street, Phoenix, AZ 85004

### Radisson Hotel Phoenix Airport North

P: +1 602-220-4400  
427 North 44th Street, Phoenix, AZ 85008

# GENERAL CONFERENCE INFORMATION

## Phoenix Sky Harbor Airport

[www.phoenix.gov/skyharborairport](http://www.phoenix.gov/skyharborairport)  
P: +1 602-273-3300

Sky Harbor is conveniently located just three miles east of downtown Phoenix. The airport has three terminals – Terminal 2, Terminal 3 and Terminal 4 – each with its own parking garage, shops, restaurants and ground transportation.

Sky Harbor's easily accessible Rental Car Center houses all the airport rental car company counters and fleets. A multi-colored "Rental Car Shuttle" provides free transportation from the airport curb at the baggage claim level to the Rental Car Center, just west of Sky Harbor.

The airport also has a free shuttle to the METRO light rail station at 44th and Washington Streets using the PHX Airport Shuttle. From the 44th Street/Washington METRO station, passengers can cross Washington Street heading south and board the airport shuttle bus. The airport shuttle buses travel to all three terminals and parallels METRO's service schedule.

## Phoenix – Mesa Gateway Airport

[www.phxmesagateway.org](http://www.phxmesagateway.org)  
P: +1 480-988-7600

The Phoenix-Mesa Gateway Airport, a smaller airport with only one terminal, is located 30 miles from downtown Phoenix. It is the home of Allegiant Airlines. The terminal features three rental car companies, a gift shop and free Wi-Fi.

## METRO Light Rail Service

[www.valleymetro.org](http://www.valleymetro.org)

The METRO light rail system features state-of-the-art vehicles that include oversized air conditioning units, tinted windows, and door entries level with station platforms for easy, no-step boarding.

METRO light rail and Valley Metro bus share the same fare system. An all-day pass for METRO light rail and Valley Metro bus is \$3.50 when purchased in advance and \$5.25 when purchased on board.

**Metro stations near the PCC:** Van Buren and Central Avenues; Washington and Central Avenues; and 3<sup>rd</sup> Street and Jefferson.

**Metro station near the Hilton Suites:** Thomas and Central Avenues.

**Metro station near the Radisson Phoenix Airport North:** 44<sup>th</sup> Street and Washington.

## Lunches

Monday and Tuesday lunches are ticketed, sit-down events with programs, the Wednesday lunch will be a casual boxed lunch in the Exhibit Hall and the Thursday lunch will be a casual lunch on Level One. These lunches are included with a full technical or individual day registration fees.

**Please Note:** Lunch on Wednesday in the Exhibit Hall will be available to Exhibitors as well as attendees.

Meal tickets are required for the lunches. Please remember to bring your ticket for entry into the lunch.

If you have previously requested a special meal such as vegetarian option, you will receive an additional meal ticket to give to your server.

Food orders cannot be changed as meal counts are guaranteed in advance. Please remember meal tickets are non-refundable.

Meals are not guaranteed to anyone arriving more than 20 minutes late to meal functions.

During the Wednesday lunch in the Exhibit Hall, **sponsored by Waste Control Specialists**, winners of Exhibitors' individual booth drawings will be announced. Be sure to attend as some of these drawings require attendance to win.

Should you be interested, a list of local restaurants is available at the Registration desk. The PCC also has a food court featuring Crust, City Central Coffee and others in the North Building.

## Refreshment Breaks

Refreshment breaks will be served in the morning and afternoon Monday through Wednesday in the Exhibit Hall.

Coffee service only will be served Monday through Thursday near the meeting rooms, on the First Level of the PCC in the morning and afternoon.

Monday refreshment breaks are sponsored by **Studsvik** and **US Ecology** in the afternoon.

Tuesday's morning refreshment break is sponsored by **Spectra Tech Inc.** and the afternoon break is sponsored by **URS**.

On Wednesday morning, the refreshment break will be sponsored by **Nuclear Engineering International**.

# GENERAL CONFERENCE INFORMATION



## Cyber Cafés

Cyber Cafés are located in the Lower Level of the PCC in the Exhibit Hall as well as on Level One near the meeting rooms. Attendees will be able to access the Internet and print. Presenters may use the computers to upload their presentations without assistance online through [www.wmsym.org](http://www.wmsym.org).

The Cyber Cafés are sponsored by **AREVA**.

## "INSIGHT" Daily Newsletter

*Insight*, the WM Symposia daily conference newsletter, reports on technical topics addressed during the sessions, exhibitor and sponsor information, industry and important daily conference news and announcements.

The first issue, Sunday/Monday, will be provided in the attendee registration bags. Be sure to pick up your Tuesday and Wednesday copies at the Registration Desk, Exhibit Hall and near the meeting rooms on the First Level of the PCC.

## Insight Online – WM2014 Update

This year, the *Insight* Newsletter will be available online at [www.wmsym.org](http://www.wmsym.org) daily. As soon as the issue hits the printer – it will be online, ready for you to read! Email: [llehman@wmarizona.org](mailto:llehman@wmarizona.org)

Newsletter Editors:

- **Linda Lehman**, *Consultant*
- **Mike Berriochoa**, *Professional Communications Services*

Contributing Editors:

- **Joy Shoemake**, *Jacobs Engineering*
- **Gabrielle Vazquez**, *Applied Research Center, Florida International University*

## Charging Stations

Attendees will have the convenience of charging their Smartphones, iPads and laptops at the WMS Charging Stations throughout the conference. Each station will include a security attendant, allowing attendees to leave their devices to charge and return at a later time. The Charging Stations are sponsored by **Canberra**.

## Mobile App - WM2014 Update Sponsored by Vista Engineering Technologies

The WM2014 Mobile App has been updated to be a full app this year and available through the Droid Store or Apple App Store. Download it onto your smart phone while onsite and get updates and up-to-date conference information throughout the conference.

## Twitter and Facebook Updates

WM2014 will be online with updates throughout the conference. On Facebook, you can find the conference at **WM Symposia**.

And if you tweet, please post to our hash tag of **#wmsym2014** so we can see all your Twitter comments.

## Daily Exhibitor Meeting

Each morning, Exhibitors will have the opportunity to meet with Jaelyn Russell, Exhibits Manager, right inside the Exhibit Hall door to give any feedback, concerns or suggestions.

An Exhibitor feedback form is included in the Exhibitor Welcome Packet distributed to booths prior to the show opening. Please be sure to complete the form and bring it to the one of the meetings:

**Monday, March 3 – 8:00 AM**

**Tuesday, March 4 - 8:30 AM**

**Wednesday, March 5 - 8:30 AM**

## Conference Proceedings

The conference proceedings are included with a full technical registration. *Approximately May 2014*, the conference proceedings will be available online for all technical registrants.

If you would like a CD-Rom and mailed to you, there will be a \$10 handling fee.

# PRESENTERS, PANELISTS AND VOLUNTEERS

## Speaker and Co-Chair Check-In

WMS asks that all Presenters (oral, panelist and poster) and Session Co-Chairs check-in at Registration on the Lower Level of the PCC. For presenter changes or other questions on your session, the Speaker and Co-Chair Check-In room is located on Level One of the PCC Room 101A.

WMS would like to thank **Longenecker & Associates, Inc.** for sponsoring the Laser Pointers used in the presentation rooms.

## Speaker's Lounge

Starting on Monday morning, March 3, coffee will be available throughout the day for all presenters in the Speaker and Co-Chair Check-In, Room 101A.

## Speaker and Co-Chair Breakfast

All Presenters, Session Co-Chairs and Student Assistants are required to attend the Speaker and Co-Chair Breakfast on the day of their session. Each session will have an assigned table where Session Co-chairs can discuss and organize their sessions.

The breakfast will be held at 7:00 am in 301A on the Third Level of the PCC on Monday through Wednesday. Thursday's breakfast will be held on the Second Level. It is optional for Poster Presenters.

**Please note: A conference name badge is required for entry. If you do not have a name badge, please visit the registration desk on the Lower Level of the Convention Center first.**

Speakers who have not checked in at Registration before the breakfast begins will have their presentation shown as canceled at the session room entrance or poster space.

## PowerPoint Presentations

WMS encourages Presenters to upload their presentations before the conference on the web at [www.wmsym.org](http://www.wmsym.org) using their own login and password. Presentations should be in .PPTX format and any videos be inserted into the presentation using PowerPoint 2010 or later.

**Presenters, please note:**

***Presentations Must Be Uploaded by 12 PM the Day before A Presentation!***

Please Note: Presenters who have not uploaded their presentation by this deadline will have their presentation canceled, unless prior arrangements have been made with Amanda Tompkins, Technical Program Coordinator and confirmed by email.

## A/V Presentation Support

If presenters need assistance with uploading or inserting videos into their PowerPoint presentations, A/V staff will be available in Room 101A at the specified times for their session number.

Please see the table below by using your session number to locate the date and time assistance is available to you.

Sessions	Date	Time
1 - 31	Sun. March 2	3 - 7 PM
32 - 49	Mon. March 3	11 AM - 1 PM
50 - 64		2 - 5 PM
65 - 80	Tues. March 4	9 AM - 1 PM
81 - 100		2 - 5 PM
101 - 124	Wed. March 5	9 AM - 1 PM

## Additional A/V Technical Support

Presenters who require additional assistance to finish their presentations may schedule a 15 minute one-on-one technical support appointment in Room 101A on Level One of the PCC. This service is only provided if staff time is available. Should additional time be requested, a fee may be charged.

Presenters who have presentations with videos are encouraged to schedule a 15 minute session to ensure their video files work properly with the provided audio visual equipment.

## Conference Support Service Center

The UPS Store located in the PCC will provide copy services and is staffed Monday through Friday from 7:00 AM - 6:00 PM and Saturday from 8:00 AM - 2:00 PM.

## Smoke Free Arizona Act

The Phoenix Convention Center is a smoke-free facility complying with the Smoke-Free Arizona Act. The Smoke-Free Arizona Act restricts smoking in public places and workplaces including but not limited to bars, restaurants, stadiums, reception areas, theatres and designated non-smoking hotel rooms. Should you wish to smoke, please look for the designated smoking areas outside of the building.

# SPECIAL MEETINGS, TRAINING AND EVENTS

## Saturday, March 1, 2014

### **Program Advisory Committee (PAC) Meeting 4:30 PM – 9:30 PM**

This pre-conference meeting will be held at the Hyatt Regency Phoenix. A separate invitation was sent to all PAC volunteers and their guests on the event details. For additional information, contact Gary Benda, PAC Chair at [GBenda@wmarizona.org](mailto:GBenda@wmarizona.org).

## Sunday, March 2, 2014

### **Roy G. Post Foundation Fundraising Golf Tournament 9:00 AM Shotgun Start Raven Golf Club at South Mountain 3636 E. Baseline Road, Phoenix 85042**

Golf registration includes continental breakfast, lunch, green fees, range balls and awards. A separate registration fee of \$195 onsite will apply.

### **Managing Projects Workshop – a Refresher Course for Nuclear Managers, Engineers and Technical Professionals**

**9:00 AM – 3:00 PM Room 106C**

This short course is intended to provide intense refresher training for managers, project leaders, engineers and technical professionals working in the nuclear projects, including reactors, remediation projects, waste management, and decommissioning. Topics covered will include fundamentals of project management; keys to successful outcome; tools of the trade; project lifecycle; time, cost and schedule; managing people, managing safety; and managing project risks.

The primary instructor for the course is **Dr. Jas Devgun** (contributing author to two recent books on the subject, including being the Editor of one). Other guest lecturers will be invited from the industry.

Participants will receive a certificate of training completion and a complete set of course notes. Professional Development Hour credits may be available from some organizations.

The workshop is being held as a service to the WMS community and to partially defray the costs, a separate registration fee of \$100 will apply. Refreshments and working lunch are included in the workshop registration fee.

### **Critical Decisions (and Tools) for First-Time and Experienced Managers (Or How I Learned to Love the Org Chart) Workshop 11:00 AM – 5:00 PM Room 106B**

This workshop provides the core elements of an effective management training program derived from applying the Department of Energy's Integrated Safety Management System and the Occupational Safety and Health Administration's Voluntary Protection Programs.

As technical professionals advance in their careers, they may eventually find themselves as a department manager. However, unless a company has a specific manager-trainee succession program, an employee's management style is learned "on the job".

Workshop instructor, **James M. Hylko** will discuss topics and real-life case studies concentrate on transitioning an employee from a technical professional to a manager; common characteristics of being a manager; what to do after taking over a department; chain of command; hiring and developing high-degree, autonomous employees; communication and delegation; periodic status checks; and determining if the program is working successfully.

These common characteristics of a strong management/leadership culture and practical career tips provide a solid foundation for any company or department that is serious about developing an effective management training program for its employees. In turn, any employee in any work environment can begin using this information and accompanying handouts immediately to become a better manager.

The workshop is being held as a service to the WMS community and to partially defray the costs, a separate registration fee of \$100 will apply. Refreshments and working lunch are included in the workshop registration fee.

### **First Time Attendee Session & Program Advisory Committee (PAC) Orientation 3:00 PM – 4:00 PM Room 101B**

Join us for this open session to learn more about WM Symposia, how to volunteer for our Program Advisory Committee (PAC) and the WM2014 conference.

WMS is a non-profit organization dedicated to education and opportunity in waste management.



**WM2014 Plenary Session**  
**8:00 AM – 9:45 AM Room 301BC**

The WM2014 Plenary Session will feature world leaders speaking on the pressing issues being faced by Waste Management in 2014 and beyond.

A Continental Breakfast will be served at 7:00 AM before the program.

**Panelists include:**



**Tiina Jalonen** is the Senior Vice President, Development of Posiva OY.

She will represent **Reijo Sundell**, President of Posiva OY who is unable to attend the conference. Ms. Jalonen has been with Posiva OY since 2001 in the area of Development of Disposal Technology. She has a M.Sc. in Process Engineering and Metallurgy from the Oulu University of Technology, Finland.



**Christopher Eckerberg** is the President of Svensk Kärnbränslehantering AB, Stockholm.

He serves as Chairman of the Board of Directors of SV AFO AB which is the company handling legacy waste from Swedish nuclear research program and is a member of the Board of Directors of Barsebäck Kraft AB, the first commercial nuclear power station to be decommissioned in Sweden.



**John G. Lehew III** is the Senior Vice President for CH2M HILL Nuclear Business Group

He is responsible for CH2M HILL's North America and Asia/Pacific Liabilities Management. John has more than 29 years of nuclear operations, decommissioning, and environmental restoration experience.

Mr. Lehew is responsible for the management of all CH2M HILL Nuclear Business Group, Nuclear Decommissioning, Environmental Remediation and Commercial Nuclear Projects across North America and Asia/Pacific regions. This portfolio has Annual Gross Revenue in excess of \$700 Million and includes CH2M HILL's concerns in seven Major Projects supporting the US DOE-EM in six geographically diverse states including the Hanford Plateau Remediation Contract, Hanford River Corridor Contract, Idaho Closure Project, East Tennessee Technical Park Project, West Valley Project, Nevada Test Site and Savannah River Site.



**David G. Huizenga** is the Senior Advisor for Environmental Management for the US Department of Energy. He is responsible for the management and oversight of the world's largest environmental remediation program.

Since July 2011, when President Obama designated him as the Acting Assistant Secretary for EM; Mr. Huizenga has reorganized EM to provide more effective assistance from EM Headquarters to the cleanup activities that are executed in the field at EM sites across the nation.

Under Mr. Huizenga's leadership, EM has also commenced a major replanning initiative to update the EM baseline and prioritize cleanup activities within the funding constraints realized in the EM program.

**WM2014 Keynote Monday Luncheon**  
**12:00 PM – 1:15 PM**      **Room 301BC**



**Kazuhiro Suzuki** is the Executive Director of Japan's International Research Institute for Nuclear Decommissioning

The Monday Keynote Luncheon will feature Mr. Kazuhiro Suzuki, the Executive Director of Japan's International Research Institute for Nuclear Decommissioning (IRID) will be the WM2014 luncheon speaker on Monday, March 3<sup>rd</sup>. Mr. Suzuki, who has a broad background in nuclear energy will provide an update on the status of the Fukushima Daiichi cleanup program, give some background on IRID, discuss how IRID is providing support to the Fukushima program and will discuss the overall nuclear power program in Japan.

Monday's lunch is included with a full technical registration. Anyone who does not have a luncheon ticket can purchased one onsite for \$40.00. Sponsored by **CB&I**.

**International Welcome Reception**  
**5:00 PM – 6:30 PM**      **Exhibit Hall**

Please join us for the **International Welcome Reception** in the Exhibit Hall. We are appreciative of our international delegates for their participation and contributions that make WM2014 a truly worldwide event. Traveling to Phoenix from nearly 25 countries, our attendees represent many ongoing and emerging markets. In keeping with WMS' mission of education and opportunity, participation of a number of these global delegates is supported by the IAEA and WMS.

Light hors d'oeuvres and refreshments will be served.

**Student and Young Professionals**  
**Networking Reception**  
**6:00 PM – 7:30 PM**      **Room 212BC**

All students, young professionals and conference attendees looking to meet and mingle with the next generation are welcome at the **Student and YP Networking Reception**, just after the close of the International Welcome Reception. Here's your chance to meet our student attendees and find out more about the next generation of WM professionals.

**Tuesday, March 4, 2014**

**Honors & Awards Luncheon**  
**12:00 PM – 1:15 PM**      **Room 301BD**

Join us at the Tuesday Honors & Awards Luncheon to honor the best presentations from the WM2013 conference, 2014 award winners and scholarship recipients. The luncheon is included with the purchase of a full technical registration.

For exhibitors and attendees who do not have a full technical registration, tickets can be purchased onsite for an additional cost of \$30.00 per ticket.



**Best of Finland & Sweden Reception**

**5:00 PM – 6:30 PM**  
**Lower Level Exhibit Hall**

Experience the **Best of Finland & Sweden** at our evening reception in the Exhibit Hall. Highlighting our featured countries for 2014, tonight's reception will feature some favorites from both countries.

Enjoy items such as Cabbage Rolls, Tarta Mandel and Laskiaispiella. This is sure to be an evening enjoyed by all. The reception is sponsored by **Posiva OY, Fortum, VTT Technical Research Centre of Finland, Teollisuuden Voima Oyj** and **SKB** (Sweden).



**Women of Waste Management**  
**Networking Reception**

**Megatrends & Networking:**  
**Game Changers for Today's Professional**



**6:00 PM – 7:30 PM**      **Room 212BC**

Fluor is again sponsoring the WoWM event that features four women leaders from diverse backgrounds who will share their ideas on game-changing trends from their personal perspectives. Refreshments will be served throughout the evening with informal seating to foster conversation and encourage sharing ideas. The panel session will be followed by a Q&A period. A networking opportunity with the speakers and industry colleagues is an integral part of the evening.



This year's WoWM panel speakers are:

- **Roxie Schescke**, President of Indian Eyes, a Native American, woman-owned small business
- **Dr. Kathryn McCarthy**, Director of the Light Water Reactor Sustainability Program Technical Integration Office for the US DOE Office of Nuclear Energy (DOE-NE)
- **Monica Regalbuto**, Deputy Assistant Secretary for Fuel-Cycle Technologies, US DOE Office of Nuclear Energy
- **Malgorzata K. Sneve**, Director of the Regulatory Cooperation Programme, Department of Nuclear Safety and Environmental Radioactivity, Norwegian Radiation Protection Authority.

Fluor will donate \$25 to the Breast Cancer Research Foundation (BCRF)\* on behalf of every person attending the event.

Last year, nearly 170 men and women, came to hear our speakers share their experiences as professional women and leaders in the industry.

So, plan to join us for a stimulating discussion and an evening that will give you new insights to successful leadership in the future and supports preventing and finding a cure for breast cancer. Sponsored by **Fluor**.

*\*BCRF's mission is to achieve prevention and a cure for breast cancer in our lifetime by providing critical funding for innovative clinical and translational research at leading **medical centers worldwide**, and increasing public awareness about good breast health. Currently, 91 cents of every dollar spent by BCRF is directed towards breast cancer research and awareness programs.*

## **Wednesday, March 5, 2014**

### **Luncheon**

**12:00 PM – 1:15 PM**

### **Lower Level Exhibit Hall**

Join us for a casual, boxed lunch in the Exhibit Hall on Wednesday. It's your last chance to visit with exhibitors before the hall closes this afternoon.

**Please note:** this luncheon is open to everyone attending the conference – including Exhibitors. Sponsored by **Waste Control Specialists**.



## **The Heard Museum Networking Event\***

**6:00 PM Bus Pickup/Hyatt Regency Phx**  
**6:15 PM – 9:00 PM Heard Museum**

Please join us on Wednesday evening for a networking and cultural experience! This year's off-property event will take place at the Heard Museum.

The Heard Museum has grown in size and stature to become recognized internationally for the quality of its collections, its educational programming and its festivals.

Dedicated to the sensitive and accurate portrayal of Native arts and cultures, the Heard is an institution that successfully combines the stories of American Indian people from a personal perspective with the beauty of art.

Tickets will be \$35 per person. The event will include transportation, two drink tickets, heavy hors d'oeuvres, guided docent tours of the museum and entertainment.

Buses will pick up at the Monroe Street Entrance at the Hyatt Regency Phoenix at 6:00 PM and the event will begin with cocktails at 6:15 PM.

Buses will shuttle throughout the evening. The last bus will depart the Heard Museum at approximately 9:30 PM.

**Please note:** a majority of the event will take place outdoors. Please be sure to bring a light jacket or sweater.

## **Thursday, March 6, 2014**

### **Networking Luncheon**

**12:00 PM – 1:15 PM            Level One**

Join us for the final networking luncheon on Thursday. The luncheon is included with the purchase of a full technical registration.

### **Panel: Management of Radioactive Waste Following a Nuclear Accident or Extreme Contamination Scenario**

**1:30 PM – 5:00 PM            Room 102BC**

This Thursday afternoon featured panel will focus on the remediation, decommissioning and related waste management aspects following a major nuclear accident or cleanup of an extreme contamination scenario. The panel will also address the crises communication which took place during these events as well as communication with the public in general during nuclear accidents or contamination events.

The panel will address the following sites: Three Mile Island Nuclear Power Plant (NPP), Chernobyl NPP (Ukraine), Fukushima NPP (Japan), Windscale Pile I (United Kingdom) and the Rocky Flats Infinity Rooms remediation. Several of the panelists also took part in the "IAEA-International Experts Meeting on Decommissioning and Remediation after an Accident" in January 2013.

**Panelists include:** **Martin T. Cross**, PhD, *Principal Consultant, Nuvia Ltd. (United Kingdom)*; **Francis X. Cameron**, *Principal Consultant, Zero Gravity Group*; **Robert Kury**, *Vice President Nuclear Liabilities D&D, Program Management, CH2MHill*; **Jack Devine**, *Chief Decommissioning Officer, Sellafield Ltd. (United Kingdom)* and **Kazuhiro Suzuki**, *Executive Director, International Research Institute for Nuclear Decommissioning (Japan)*.

### **Networking Reception**

**5:00 PM – 6:00 PM            Level One Foyer**

All workshop participants and Thursday attendees are invited to relax and enjoy a drink while networking after the wrap-up of the afternoon sessions.

## **Friday, March 7, 2014**

### **Program Advisory Committee (PAC) Meeting and Luncheon 7:00 AM – 10:30 AM Hyatt Regency Phoenix**

This conference wrap-up meeting and planning for WM2015 will be held at the Hyatt Regency Phoenix. PAC Members were sent a separate invitation and agenda. Breakfast will be provided. Contact Gary Benda, PAC Chair at [GBenda@wmarizona.org](mailto:GBenda@wmarizona.org) for more information.

### **US NRC Public Workshop on the Status Low-Level Radioactive Waste Disposal Rulemaking and Strategic Assessment of Low-Level Waste Regulatory Program 8:00 AM – 1:00 PM Renaissance Phoenix Downtown 50 E. Adams, Phoenix - Salons 7 & 8**

The US NRC will conduct a public meeting on Friday, immediately following the WM2014 Conference. The workshop will be held from 8:00am – 1:00pm. Registration is from 7:30am – 8:00am.

The purpose is to discuss the status of proposed revisions to the US Nuclear Regulatory Commission's (NRC's) Low-Level Radioactive Waste (LLRW) disposal regulations and gather information on an update to the NRC's 2007 Strategic Assessment of the LLRW regulatory program from stakeholders and other interested members of the public.

The staff is proposing to revise Part 61 in response to Commission direction and stakeholders' comments. The staff is also seeking comments on developments that would affect the LLRW Regulatory Program in the next 5-7 years, including changes to the national landscape in the LLRW area that would affect licensees and sited States in the context of safety, security, and the protection of the environment.

All are welcome to attend, including waste generators, processors, disposal facility operators, States, LLW Compacts, advocacy groups and members of the public. Although this meeting is not a part of the WM2014 Conference, it is being held the day after the conference ends to facilitate participation by members of the waste industry and other stakeholders who have an interest in the subject. For questions or additional information, please contact Gregory Suber at [Gregory.Suber@NRC.gov](mailto:Gregory.Suber@NRC.gov).

## Roy G. Post Foundation

The Roy G. Post Foundation is a charitable trust dedicated to the education for the safe management of nuclear materials, honoring Dr. Roy G. Post and his substantial contributions in the field.

Funds are raised through the **Official Roy G. Post Benefit Golf Tournament** held annually preceding the WMS Conference. The tremendous support of the WMS community allows the Post Foundation to achieve their charitable goals.



The charitable giving is directed toward scholarships for students throughout the world pursuing an education in nuclear waste management and provides assistance for students to attend the conference each year.

In addition, the Post Foundation sponsors the Student Poster Competition held on Monday afternoon during the conference. The student winner of that competition is awarded \$500 cash.

WM Symposia and the Post Foundation offer students housing assistance, onsite technical session positions and a Student & Young Professionals Reception on Monday night.

Special thanks to the individuals who donated to the Post Foundation with their conference registration:

**Greg Broda**- EnergySolutions  
**Jan Carlin**- Carlin Consulting  
**Laurie Ford**- Critical Path Management  
**Jack McElroy**- McElroy Consulting  
**Gregg Schneider** -GE Hitachi Nuclear Energy

For more information on the Post Foundation, please visit [www.roygpost.org](http://www.roygpost.org).

## Contracting Sessions Open to Exhibitors

For WM2014, three business and contracting sessions will discuss upcoming opportunities and administrative issues in the waste management industry.

These sessions are open to all attendees, including Exhibitors without a Technical registration badge who may attend at no additional cost.

### Session 1 WM2014 Plenary Session

The plenary panel will focus on government and industry world leaders speaking on the pressing issues facing radioactive waste management in 2014 and beyond.

### Panel Session 52A Addressing the Small Business Barriers in Contracting with the US DOE

This panel will focus on the barriers for small businesses in contracting with the US DOE. In 2014, the US DOE has increased its small businesses contracting goal from 6% to 10%. The US DOE only receives credit as a prime contractor when subcontracting to these small businesses. During a declining US federal budget, with less contracting dollars and more going for base prime contractor services, these goals are challenging. This panel will interact extensively with the audience in listening and discussing methods to achieve these goals and barriers that need to be mitigated.

### Panel Session 68 US DOE Procurement and Contracting Opportunities

This panel will focus on US DOE procurement and contracting activities.

## WM2015 Conference

The WM2015 conference will be held **March 15- 19, 2015** at the Phoenix Convention Center.

If you are interested in sponsoring or exhibiting at either conference, please contact WMS at [exhibits@wmarizona.org](mailto:exhibits@wmarizona.org).

If you are interested in presenting at the WM2015 conference, the Call for Abstracts will be distributed in June 2014.

# GUEST AND ATTENDEE TOURS AND ACTIVITIES

If you did not have a chance to register for a tour before the conference and are interested in joining one, please stop by the Registration Desk for further details.

All tours depart from the Monroe Street exit of the Hyatt Regency Phoenix. Boarding time is 15 minutes prior to scheduled departure listed. Be sure to pack a jacket, hat, sunscreen and your camera. Please refrain from wearing perfumes as some guests may be sensitive.

Organized by WMS and provided by Detours of Arizona, Arizona Outback Adventures and other vendors. WM Symposia reserves the right to cancel any tour not reaching the minimum number of participants.

## Saturday, March 1, 2014

### **Day Tour of Grand Canyon, Montezuma Castle, Navajo Nation & Flagstaff** **\$145.00/pp      7:00 AM – 8:00 PM**

Our day will begin with a scenic drive to **Montezuma Castle National Monument** where you will be able to view the ancient Sinaguan cliff dwelling estimated to be 1,000 years old.

Here, you will see the famous 20 room high-rise apartment, nestled into a towering limestone cliff that tells a story of ingenuity, survival and prosperity in an unforgiving desert.

Next, we'll head to the **Navajo Nation** where you will be treated to views of the Painted Desert, with a stop at a prominent trading post featuring some of the highest quality authentic Navajo art and craft work. Lunch will also be served.

Following lunch, we'll enter the **Grand Canyon National Park**, where you will get an up close view of the Little Colorado River Gorge and the full scope of the Grand Canyon. We'll have more than three hours of a guided tour starting with the infamous East Rim of the Canyon. Next the tour will head to the South Rim where you can walk the rim, shop and capture the view.

Returning from the Canyon, we will travel the outskirts of the Route 66 town of **Flagstaff** and stop for dinner on your own.

The tour includes lunch, park entry fees, transportation and bottled water.

## Sunday, March 2, 2014

### **Sonoran Desert Guided Hike** **\$50.00/pp      10:00 AM-2:00 PM**

Located in the East Valley, Scottsdale's McDowell Sonoran Preserve - Brown's Ranch Trail is an easy to moderate terrain full of beautiful scenery including remnant of the old ranch and a stunning wildflowers.

The exploratory hikes are designed for individuals of all fitness levels. Healthy trail snacks and bottled water will be provided along with all entry and permit fees and a First Aid/CPR Certified Guide.

Hikers will be required to sign a Waiver of Liability. Comfortable athletic shoes or hiking shoes are required. No flip flops or loose fitting footwear is permitted. Guests are strongly urged to wear a hat, sunglasses and sunscreen. The tour includes park entry fees, transportation and bottled water.



### **Desert Botanical Garden** **Chihuly in the Garden Exhibit** **\$25.00/pp      10:30 AM – 2:30 PM**

Discovery and surprise await you on the Garden trails. Artist **Dale Chihuly** returns to the Desert Botanical Garden with a stunning exhibition of his extraordinary and vibrant works of art. Chihuly's work is in more than 200 museum collections worldwide including the Metropolitan Museum of Art, the Smithsonian American Art Museum and the Corning Museum of Glass.

Our tour will begin with an up-close view of Chihuly's exhibit, **Chihuly in the Garden**, showcasing his vibrant glass art pieces nestled within the gardens. During the tour you will have an opportunity to learn about unique desert plants from around the world. Our guided tour will last for an hour, followed by time for you to explore the gardens on your own. The tour includes garden and exhibit entry fees, private tour, transportation and bottled water. Lunch on your own.

## **Monday, March 3, 2014**

### **A Day of Shopping**

#### **The Outlets at Anthem & Old Town Scottsdale**

**\$50.00/pp                    9:30 AM – 4:00 PM**

We'll head over to charming **Old Town Scottsdale** for an opportunity to browse the specialty shops and visit **Scottsdale Fashion Square**. Next you'll enjoy a day of bargain shopping as we head to one of Arizona's must see outlet malls, **The Outlets at Anthem**. With over 60 designer stores offering 30-70% off, you'll be sure to find something!

In Old Town you will be able to find a wide variety of choices including jewelry, gift shops, and western wear. If you head over to Fashion Square you will be shopping in the largest shopping mall in Arizona and the American Southwest, with approximately 2 million square feet of retail space, it among the top 30 largest malls in the country. By the time we head home, you'll have crossed everything off your shopping list! The tour includes lunch, transportation and bottled water.

## **Tuesday, March 4, 2014**



### **Phoenix Coyotes vs. Vancouver Canucks Hockey Game**

**\$65.00/pp                    6:15 PM – 10:30 PM**

Calling all hockey fans! Join us for what looks to be quite an exciting game as the Phoenix Coyotes take on the Vancouver Canucks at the Jobing.com arena. Our seats will be located in the lower level, close enough to hear the puck as it whooshes by.

And after the game, we'll have the rare opportunity to go down to the ice and take an actual slap shot on the ice! Don't forget your camera; you won't want to miss this!

The tour includes a game ticket, \$10 food voucher, slap shot experience, transportation and bottled water.

## **Tours Cancelled**

- Musical Instrument Museum/Café Allegro
- Afternoon Tea in the Garden - Desert Botanical Garden/Chihuly in the Garden



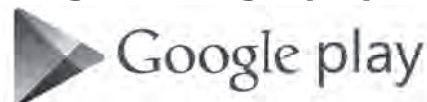
For more information on Phoenix and the surrounding Valley of the Sun, go to [www.visitphoenix.com](http://www.visitphoenix.com).

### **To upload the WM2014 Mobile Program App**

**On your iPhone or iPad, go to  
The App Store**



**On your Android Phone  
or Tablet  
go to Google play**



**Search:  
WM Symposia**

# SCHOLARSHIPS, HONORS AND AWARDS

In keeping with the WMS' mission of providing education and opportunity, the following awards and scholarships will be presented during the Tuesday Honors and Awards Luncheon beginning at 12:00 PM.

This luncheon is included in the Full Technical and Daily Technical registration fees. Add-on tickets are available; please visit the Registration Desk.

## Roy G. Post Foundation Scholarships

These scholarships are awarded in memory of Dr. Roy G. Post. The Scholarships and the Foundation carry on Dr. Post's vision of education in this field and honor the Founder of the annual Waste Management Conference. The Roy G. Post Foundation is a 501c3 tax-deductible foundation dedicated to education in the safe management of nuclear materials.

The 2013-2014 scholarship recipients are:

### Graduate Awards - \$5,000

- **Michele Hendrickson**, Washington State University
- **Derrell Hood**, Clemson University
- **Leena Malinen**, University of Helsinki, Finland
- **Nicholas Master-waage**, University of Manchester, United Kingdom
- **Masahiko Nakase**, Graduate School of Tokyo Institute of Technology, Japan
- **Michelle Newcomer**, University of California – Berkeley
- **Jenelle Parson**, Colorado State University
- **Arif Qureshi**, University of Ontario Institute of Technology, Canada
- **Chak-hu (Michael) Tso**, University of Arizona

### Undergraduate Awards - \$2,500

- **Daryn Cressy**, University of Ontario Institute of Technology, Canada
- **Clifford Hart**, Texas A&M University
- **Jennifer Nguyen**, Georgia Institute of Technology
- **Steven Wessels**, Missouri University of Science and Technology

## Best Oral Presentations

At each conference, WMS recognizes the two best oral presentations/papers. In order to honor high quality presentations, the American Nuclear Society (ANS) and the American Society of Mechanical Engineers (ASME) presents an award for the Best Presentations/Papers. The WM2013 Winners are:

**ANS Award - Best Oral Presentation/Paper: "Communicating Performance Assessments Results"** by Mark Layton, Savannah River Remediation LLC (USA). Session 72, Abstract #13609 (Session Lead Organizer: W.T. (Sonny) Goldston).

**ASME Award - Best Oral Presentation/Paper: "Studies, Transport and Treatment Concept for Boilers from Berkeley NPP, England"** by Bo Wirendal, Studsvik Nuclear AB; David Saul, Joe Robinson & Gavin Davidson, Studsvik UK Ltd. Session 8, Abstract #13599 (Session Lead Organizer: Linda Beach).

## Best Poster Presentations

Judges select the poster/paper based on technical quality and preparation of the work as described in the guidelines as well as attendee judging forms. Each track selects the best poster/paper which are then displayed and re-judged on Wednesday afternoon for the best of the conference. The WM2013 Winners are:

**ANS Award - Best Poster Presentation/Paper: "An Evaluation of Characterization and Closure Options for Underground Pipelines within a Hanford Site Single-Shell Tank Farm"** by Michelle Hendrickson, Washington State Department of Ecology; Paul Seeley, Cenibark International, Inc; Janet Badden and Michael Connolly, Washington River Protection Solutions. Abstract #13210; from Track 7 – Environmental Remediation.

**ASME Award - Best Poster Presentation/Paper: "Aerosol Formation from High-Pressure Sprays for Supporting the Safety Analysis for the Hanford Waste Treatment and Immobilization Plant"** by Phillip Gauglitz, Lenna Mahoney, Phillip Schonewill, Jagannadha Bontha, Jeremy Blanchard, Dean E. Kurath, Richard Daniel and Chen Song, Pacific Northwest National Laboratory. Abstract #13183; from Track 2 – Retrieval and Transport of HLW.

# SCHOLARSHIPS, HONORS AND AWARDS

## WMS/ASME Sarge Ozker Award

Named in honor of M. Sacid (*Sarge*) Ozker and established in 1980, this award is bestowed for distinguished service and eminent achievement in the commercialization of nuclear power/energy with particular emphasis in the field of radioactive waste management. It is presented by the Nuclear Engineering Division - Radwaste Systems Operating Committee of ASME.



The 2014 Sarge Ozker Award is presented to **Gary Benda, WM Symposia.**

## James A. Glasgow Scholarship

This WM Symposia scholarship is given in recognition of the contributions of James Glasgow, Esq. for his support of WMS, and is designed to assist a second or third-year law student who demonstrates a meaningful interest in environmental law while studying at the University of Arizona, James E. Rogers College of Law.

The 2014 James A. Glasgow Scholarship recipients are:

- **Ms. Mohamed Djenabou**
- **Matthew R. McCray**

## WMS Fellow Award

Established in 2011, WMS established the honor of WMS Fellow to recognize volunteers for distinguished contributions to the advancement of radioactive waste and radioactive material management.

Elevation to the status of WMS Fellow is attained through peer recognition and confirmation by the WMS Board of Directors.

The 2014 Fellow Award Recipients are:

- **Dick Blauvelt, Portage, Inc.**
- **Leslie Jardine, L.J. Jardine Services**
- **Linda Lehman, Consultant**
- **Nancy Rothermich, Lawrence Berkeley National Laboratory**
- **Don Wood, GaeaTech Services**

## WMS /Wendell D. Weart Lifetime Achievement Award

Named in honor of Wendell D. Weart, the WMS Lifetime Achievement Award recognizes the long-term commitment of the recipient to solving major nuclear waste challenges, which may include education, research, public policy, or implementation of solutions for managing nuclear wastes, and whose actions have contributed to the resolution of significant nuclear waste management issues.



The 2014 WMS Lifetime Achievement Award, sponsored by Sandia National Laboratories, is presented to **Mark W. Frei, Longenecker & Associates.**

## Program Advisory Committee Award

WMS has established the Program Advisory Committee (PAC) Award to annually recognize an individual whose outstanding contributions have helped make and keep the annual WM Conference the world's premier technical conference on the management and disposal of nuclear waste.

The first WMS PAC Award was given to Dr. Mort Wacks at WM03, in recognition of his significant contributions in establishing and maintaining the Waste Management technical conference.



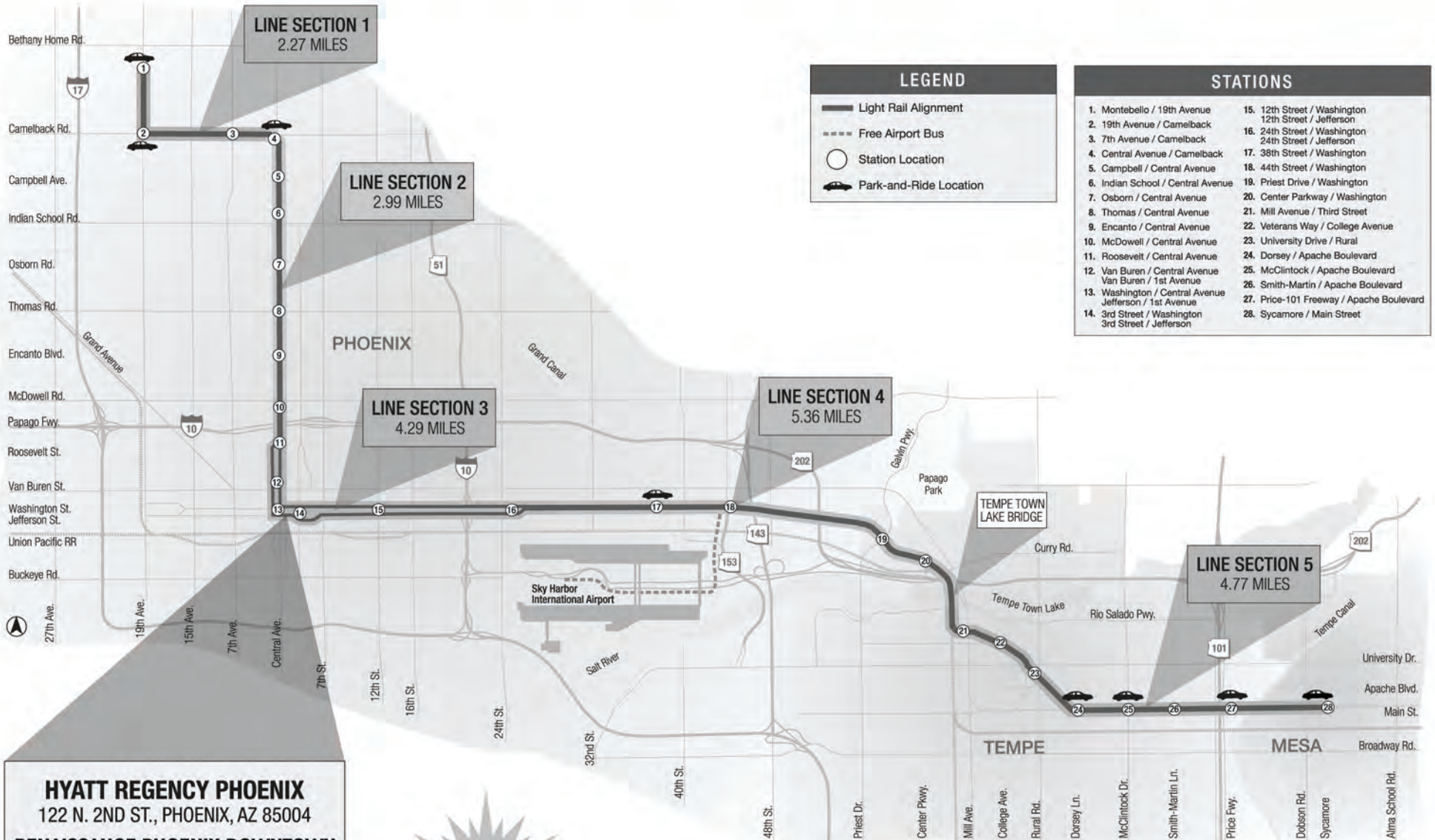
The 2014 WMS Program Advisory Committee Award recipient is Wolfgang Steinwarz, PhD with Siempelkamp Nukleartechnik GmbH.

Be sure to join the celebration on Tuesday, March 4<sup>th</sup> to honor these achievements.

The luncheon will be held on Level Three, 301BD; beginning at 12:00 pm. Tickets will be collected at the entrance. Lunch service will conclude by 12:20 pm.

# PHOENIX CONVENTION CENTER

## Phoenix Metro Light Rail | Light Rail Line Map



**HYATT REGENCY PHOENIX**  
122 N. 2ND ST., PHOENIX, AZ 85004

**RENAISSANCE PHOENIX DOWNTOWN**  
50 E. ADAMS ST., PHOENIX, AZ 85004

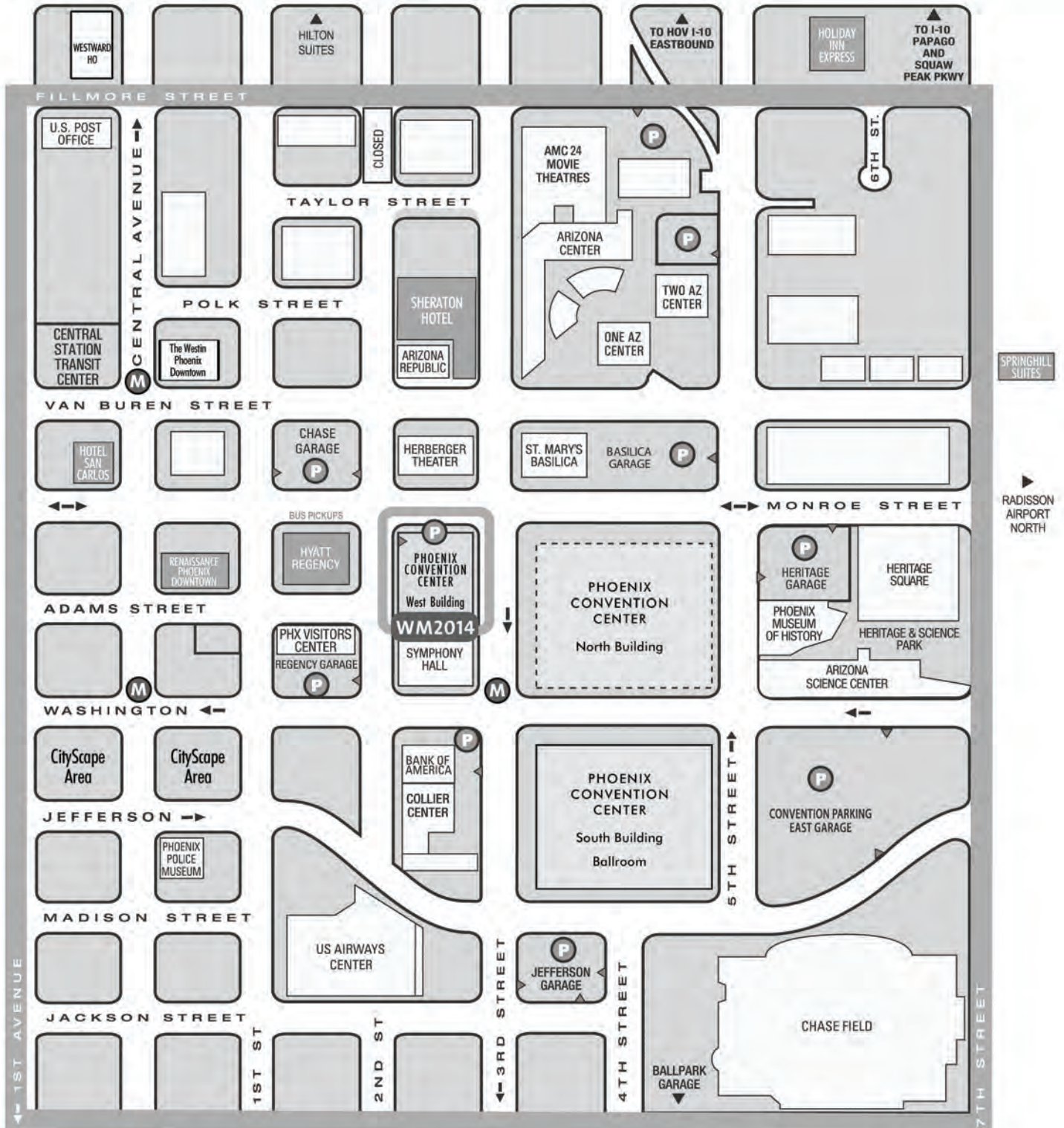
**PHOENIX CONVENTION CENTER**  
111 N. 3RD ST., PHOENIX, AZ 85004





# PHOENIX CONVENTION CENTER

## Walking & Parking Guide



### WM2014 HOTELS

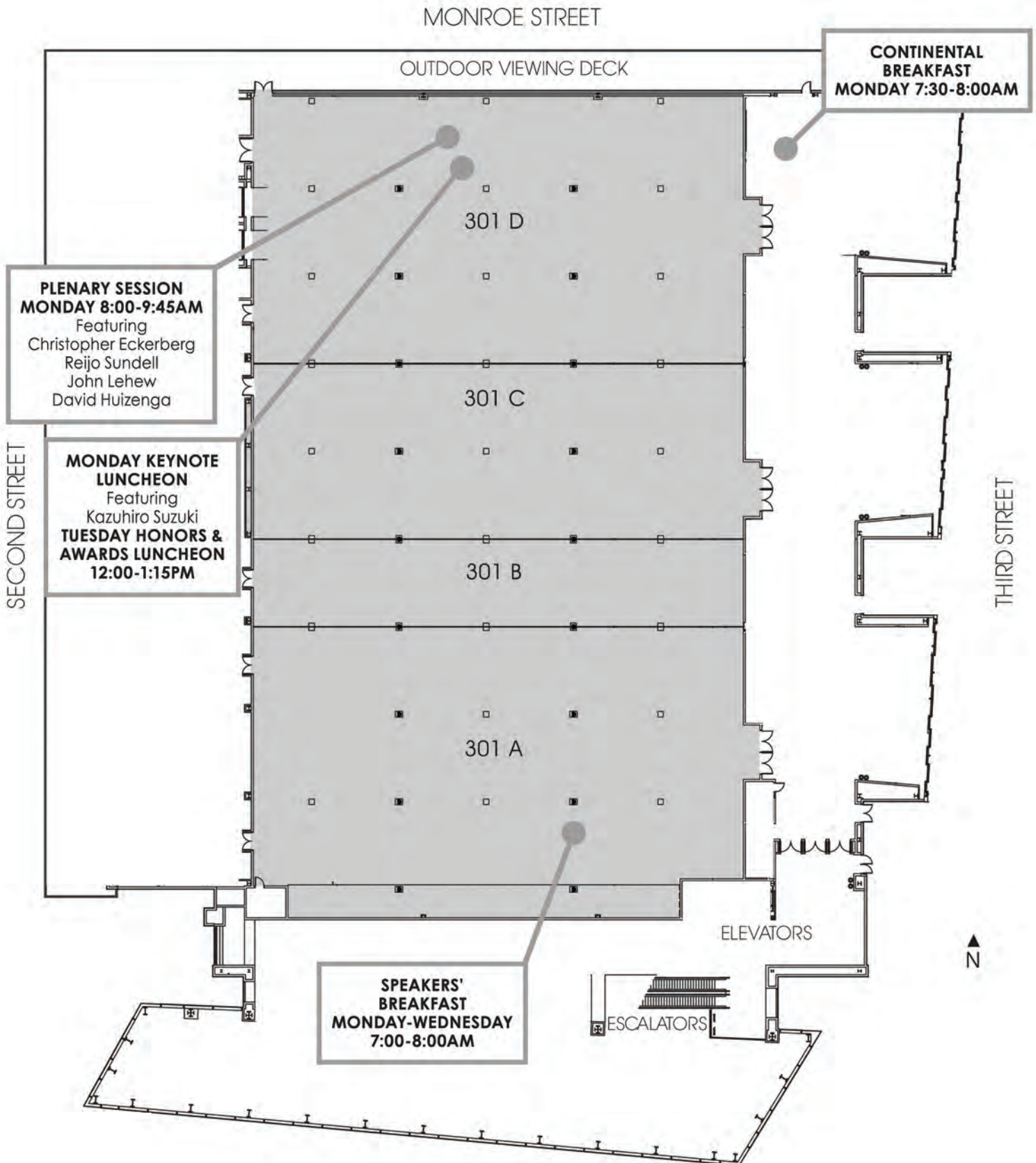
- Hyatt Regency Phoenix** • 122 North 2nd Street • Phoenix, AZ 85004 • (602) 252-1234
- Renaissance Phoenix Downtown** • 50 East Adams Street • Phoenix, AZ 85004 • (602) 333-0000
- Holiday Inn Express** • 620 North 6th Street • Phoenix, AZ 85004 • (602) 452-2020
- Radisson Hotel Phoenix Airport North** • 427 North 44th Street • Phoenix, AZ 85008 • (602) 220-4400
- Hilton Suites** • 10 East Thomas Road • Phoenix, AZ 85012 • (602) 222-1111

### LEGEND

- Parking Garages
- Parking Garage Entrance
- Metro Station

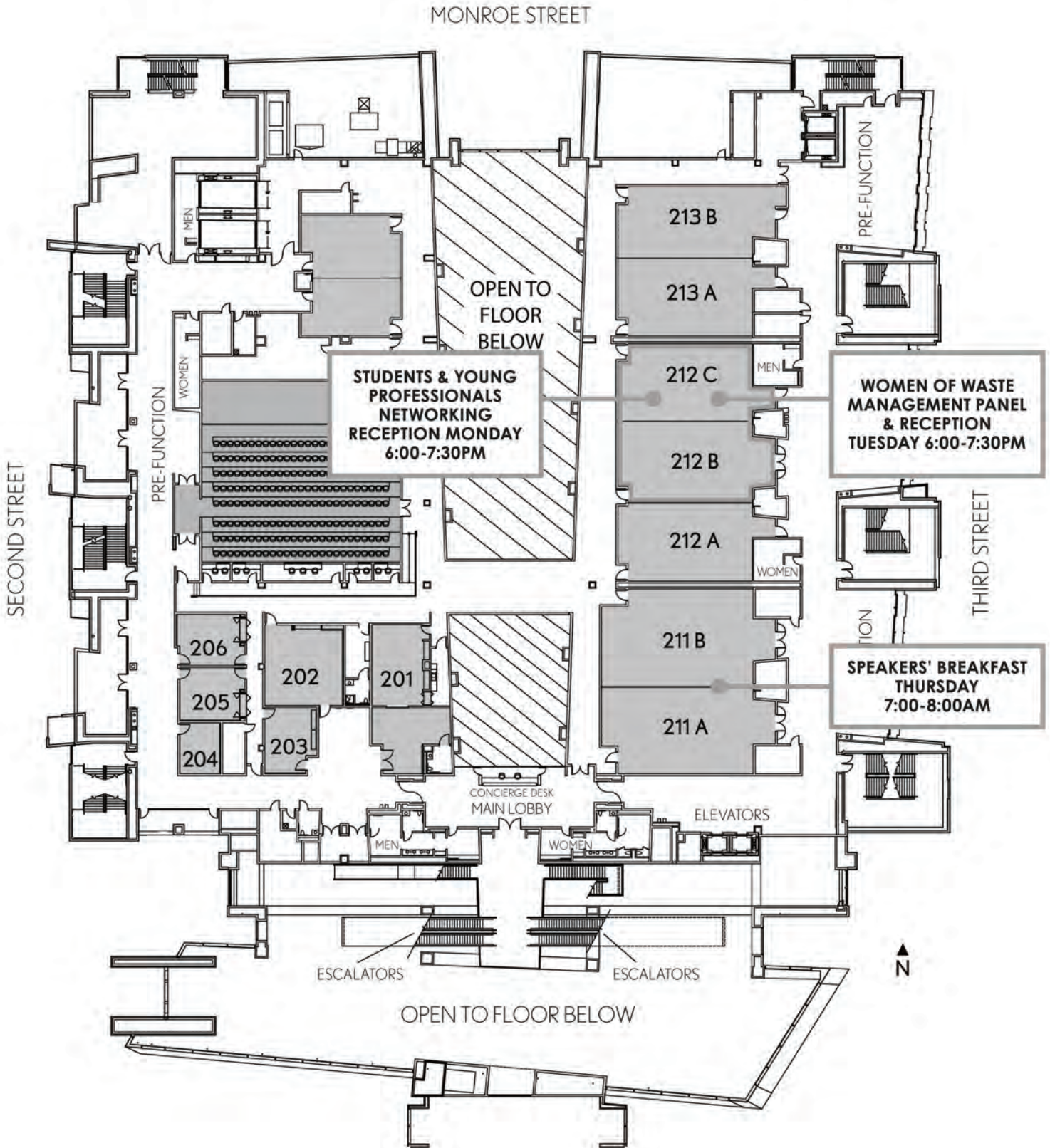
PHOENIX CONVENTION CENTER

West Building | West Ballroom | 300 Level



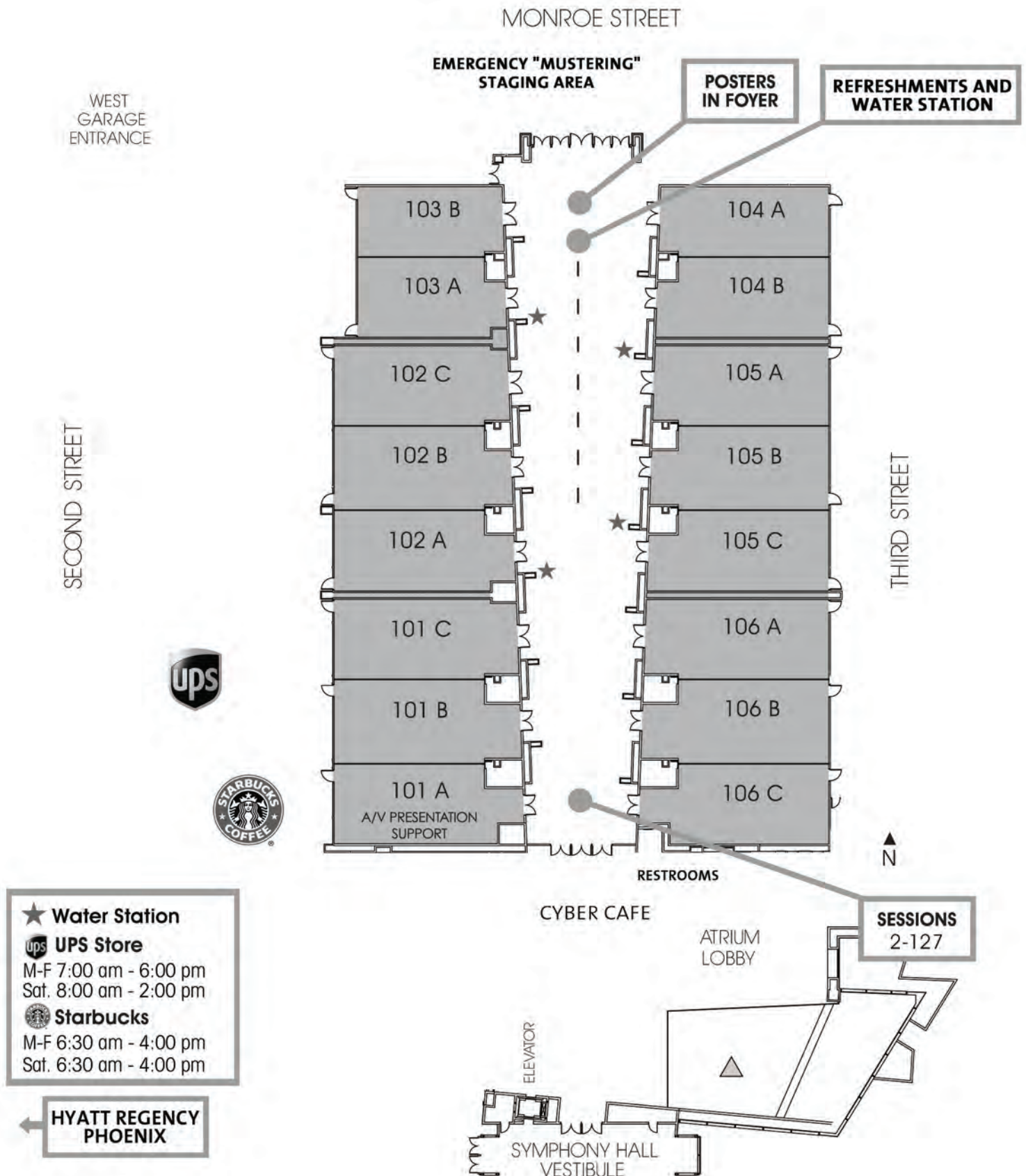
# PHOENIX CONVENTION CENTER

## West Building | Conference Center | 200 Level



# PHOENIX CONVENTION CENTER

## West Building | 100 Level | Street Level

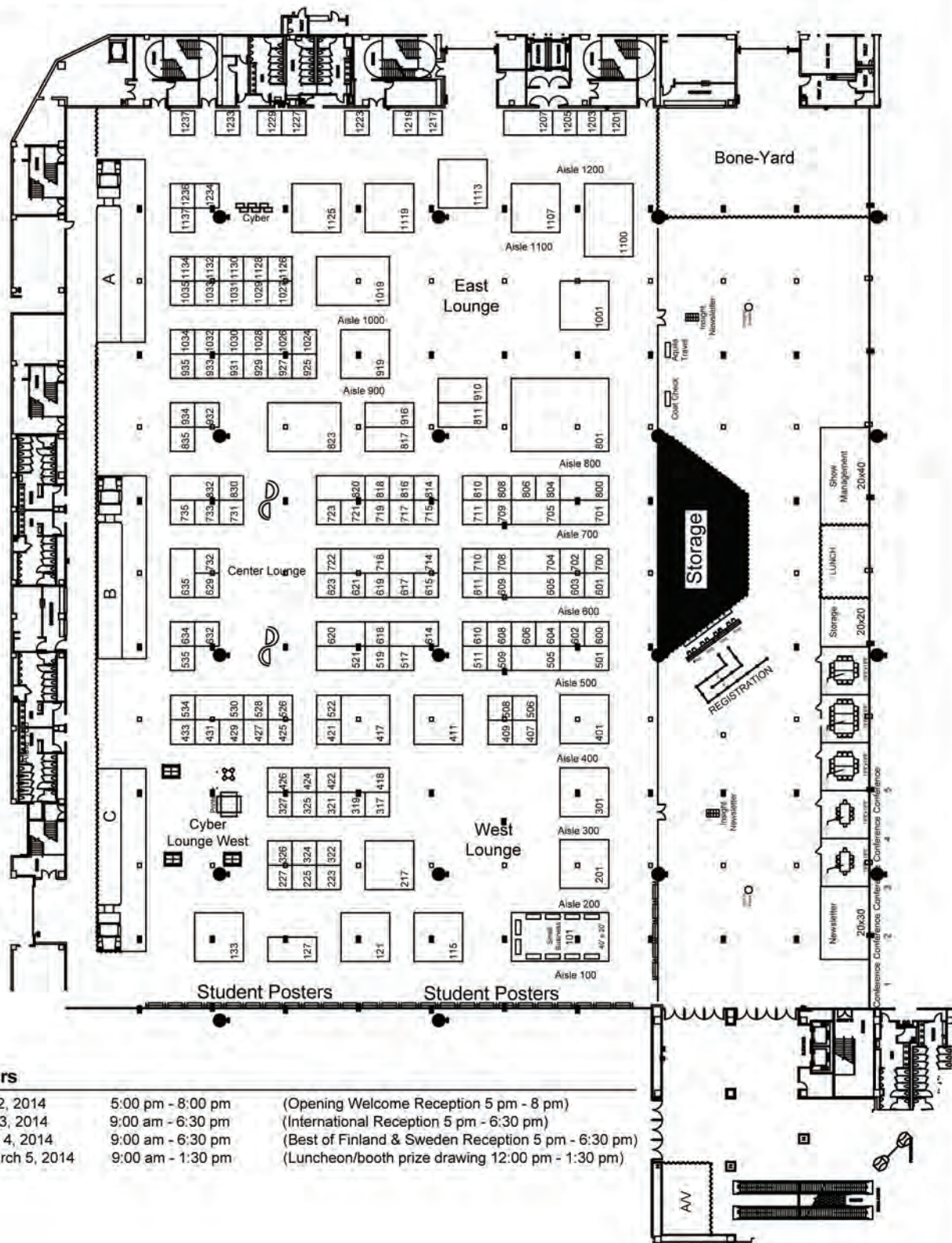




# WM2014 Conference

## March 2 - 6, 2014

### Phoenix Convention Center West Building Hall 4



#### Exhibit Hours

Sunday March 2, 2014	5:00 pm - 8:00 pm	(Opening Welcome Reception 5 pm - 8 pm)
Monday March 3, 2014	9:00 am - 6:30 pm	(International Reception 5 pm - 6:30 pm)
Tuesday March 4, 2014	9:00 am - 6:30 pm	(Best of Finland & Sweden Reception 5 pm - 6:30 pm)
Wednesday March 5, 2014	9:00 am - 1:30 pm	(Luncheon/booth prize drawing 12:00 pm - 1:30 pm)

# WM2014 Comprehensive List of Acronyms

*\* Acronyms are US unless noted otherwise*

## A

**ACRS** Advisory Committee on Reactor Safety  
**ADA** Americans with Disabilities Act  
**AEA** Atomic Energy Agency or the Atomic Energy Act of 1954  
**AECL** Atomic Energy of Canada Limited\*  
**AFCEE** Airforce Center for Engineering and the Environment  
**AFR** Away-From-Reactor Storage  
**ALARA** As Low As Reasonably Achievable  
**ANDRA** Agence nationale pour la gestion des déchets radioactifs (France)\*  
**ANL** Argonne National Laboratory  
**ANS** American Nuclear Society  
**ARM** Accelerator-Produced Radioactive Material  
**ASME** American Society of Mechanical Engineers  
**ASTM** American Society for Testing Materials

## B

**BNL** Brookhaven National Laboratory  
**BRC** Below Regulatory Concern or Blue Ribbon Commission on America's Nuclear Future  
**BTP** NRC Branch Technical Position  
**BWR** Boiling Water Reactor

## C

**CE&T** Public Communication, Participation, Education & Training  
**CEA** Commissariat à l'Énergie Atomique (France)\*  
**CERCLA** Comprehensive Environmental Response, Compensation and Liability Act  
**CNSC** Canadian Nuclear Safety Commission\*  
**CFR** Code of Federal Regulations  
**CH-TRU** Contact-Handled Transuranic Radioactive Waste  
**CPP** Crosscutting Policies & Programs

## D

**DAS** Deputy Assistant Secretary  
**DAW** Dry Activated Waste  
**DCS** Dry Container Storage  
**D&D** Decontamination & Decommissioning  
**DNFSB** Defense Nuclear Facility Safety Board  
**DOD** US Department of Defense  
**DOE** US Department of Energy  
**DOT** US Department of Transportation  
**DU** Depleted Uranium  
**DWPF** Defense Waste Processing Facility

## E

**EC** European Commission\*  
**EDF** Electricité de France (France)\*  
**EFCOG** Energy Facilities Contractors Group  
**EIS** Environmental Impact Statement  
**EM** Environmental Management  
**ENEA** National Agency for New Technologies, Energy and Environment (Italy)\*

**EPA** US Environmental Protection Agency  
**EPRI** Electric Power Research Institute  
**ER** Environmental Remediation  
**EU** European Union\*  
**ES&H** Environment, Safety & Health

## F

**FUSRAP** Formerly Utilized Sites Remedial Action Program

## G

**GAO** United States Government Accountability Office  
**GIS** Geographical Information System  
**GNEP** Global Nuclear Energy Partnership  
**GTCC** Greater Than Class C Low-Level Radioactive Waste

## H

**H&S** Health and Safety  
**HEPA** High Efficiency Particulate Air  
**HEU** Highly Enriched Uranium  
**HLW** High-Level Radioactive Waste

## I

**IAEA** Int'l Atomic Energy Agency (Austria)\*  
**ICRP** Int'l Commission on Radiological Protection  
**IFNEC** International Framework for Nuclear Energy Cooperation \*  
**ILW** Intermediate Level Radioactive Waste  
**INL** Idaho National Laboratory  
**IPAC** International Program Advisory Committee  
**IPSN** Institute de Protection et de Surete (France)\*  
**ITRC** Interstate Technology Roundtable Commission

## J/K

**JAEA** Japan Atomic Energy Agency (Japan)\*  
**KAERI** Korea Atomic Energy Research Institute (Korea)\*

## L

**LAW** Low-Activity Radioactive Waste  
**LANL** Los Alamos National Laboratory  
**LBL** Lawrence Berkeley National Laboratory  
**LCA** Life-cycle Assessment  
**LEU** Low Enriched Uranium  
**LL/ILW** Low- and Intermediate-Level Radioactive Waste  
**LLNL** Lawrence Livermore National Laboratory  
**LLRW/LLW** Low-Level Radioactive Waste  
**LLRWMO** Low-Level Radioactive Waste Management Office (Canada)\*  
**LM** Office of Legacy Management, US DOE  
**LSA** Low Specific Radioactive Activity  
**LTM** Long Term Monitoring  
**LWR** Light-Water Reactor

## M

**M&I** Management & Integration  
**M&O** Management & Operation  
**MRS** Monitored Retrievable Storage  
**MW** Mixed Hazardous and Radioactive Wastes

## N

**NAGRA** National Cooperative for the Disposal of Radioactive Waste (Switzerland)\*  
**NCRP** National Council on Radiation Protection  
**NDA** Nuclear Decommissioning Authority (UK)\* or Non-Detectable Activity  
**NDAA** National Defense Authorization Act of 2005  
**NEA** Nuclear Energy Agency (France)\*  
**NEI** Nuclear Energy Institute  
**NEPA** National Environmental Policy Act of 1969  
**NFDI** National Facility Disposition Initiative  
**NNSA** National Nuclear Security Administration  
**NNSS** Nevada National Security Site  
**NORM** Naturally Occurring Radioactive Material  
**NPP** Nuclear Power Plant  
**NRC** US Nuclear Regulatory Commission  
**NTS** Nevada Test Site  
**NWMO** Nuclear Waste Management Organization (Canada)\*  
**NWPA** Nuclear Waste Policy Act of 1982  
**NWPAA** Nuclear Waste Policy Amendments Act of 1987  
**NWTRB** Nuclear Waste Technical Review Board

## O

**OECD** Organization for Economic Cooperation & Development (France)\*  
**OPG** Ontario Power Generation Inc.\*  
**ORNL** Oak Ridge National Laboratory

## P

**PA** Performance Assessment  
**PAC** Program Advisory Committee  
**PCC** Phoenix Convention Center  
**PFPP** Plutonium Finishing Plant  
**PHAI** Port Hope Area Initiative (Canada)\*  
**PNNL** Pacific Northwest National Laboratory  
**PM** Particulate Matter or Project Manager  
**PRA** Probabilistic Risk Analysis  
**PROC** People's Republic of China\*  
**PWR** Pressurized Water Reactor

## Q

**QA** Quality Assurance  
**QAPP** Quality Assurance Program Plan  
**QC** Quality Control

## R

**R&D** Research and Development  
**RCRA** Resource Conservation and Recovery Act of 1976  
**RDD** Radiological Dispersion Devices  
**R,D&D** Research, Development and Demonstration

**RH-TRU** Remote-Handled Transuranic Radioactive Waste  
**RI/FS** Remedial Investigation/Feasibility Study  
**ROK** Republic of Korea\*  
**RPV** Reactor Pressure Vessel

## S

**SAR** Safety Analysis Report  
**SARP** Safety Analysis Reports for Packaging  
**SFEN** Société Française d'Énergie Nucléaire (France)\*  
**SKB** Swedish Nuclear Fuel and Waste Mgmt. Co\*  
**SNF** Spent Nuclear Fuel  
**SNL** Sandia National Laboratories  
**SNM** Special Nuclear Material  
**SPAs** Special Packaging Authorizations  
**SPRU** US DOE Separations Process Research Unit  
**SRNL** Savannah River National Laboratory  
**SRS** Savannah River Site  
**SRW** Solid Radioactive Waste  
**ST** Special Topics including Security, Safety & Safeguards  
**SVE** Soil Vapor Extraction

## T

**TENORM** Technologically-Enhanced Naturally Occurring Radioactive Material  
**TER** – US NRC Technical Evaluation Report  
**TRU** Transuranic (elements with atomic number > than 92)  
**TRUPACT** Transuranic Waste Package Transporter  
**TSD** Treatment Storage and Disposal

## U

**UK** United Kingdom  
**US/USA** United States of America  
**USACE** US Army Corps of Engineers  
**USAF** US Air Force  
**US DOD** US Department of Defense  
**US DOE** US Department of Energy  
**US DOT** US Department of Transportation  
**US EPA** US Environmental Protection Agency  
**US NRC** US Nuclear Regulatory Commission  
**UNF** Used Nuclear Fuel

## W/Y

**WAC** Waste Acceptance Criteria  
**WD** Waste Determination  
**WERC** Waste-Management Education & Research Consortium  
**WIPP** Waste Isolation Pilot Plant  
**WIR** Waste Incidental to Reprocessing  
**WM** Waste Management  
**WMS** Waste Management Symposia, Inc.  
**WRAP** Waste Receiving and Processing  
**WS** Wet Storage  
**WTP** Waste Treatment Plant at Hanford  
**WVDP** West Valley Demonstration Project  
**WVDPA** West Valley Demonstration Project Act  
**YM** Yucca Mountain

# Track List with Related Sessions

The WM Technical Program is organized by volunteers in nine Tracks. Listed below are the descriptions of these tracks and the sessions organized for WM2014. Also listed below are four subject threads that crosscut several Tracks.

## **1 - CROSSCUTTING POLICIES AND PROGRAMS (CPP)**

This track includes overall crosscutting policies and major programs. Similar sessions that are not crosscutting and thus specific to a single waste type (e.g. HLW, SNF, LLW, etc.) or program (e.g. ER, D&D, etc.) are in the specific track for that waste type or program. Presentations and panels of waste management programs and policies at the national, multi-national and international level are found in this track. Other potential sessions include crosscutting regulatory issues, contracting, legal aspects, permitting (licensing) and compliance activities, criteria and standards development, privatization issues, legislation, US Price-Anderson Act, Paris Conventions, enforcement agency and state issues (including multi-party agreements), interface, and other high level crosscutting issues that involve multiple waste types/programs or tracks.

**Related Sessions: 1, 2, 3, 10, 12, 13, 14, 15, 16, 22, 23, 24, 29B, 31, 32, 34, 35, 36, 44, 45, 49, 50, 51, 52A, 52B, 68, 69, 82, 88, 92, 93, 94, 98, 99, 100, 103, 104, 112, 113, 127**

## **2 - HIGH-LEVEL RADIOACTIVE WASTES (HLW), SPENT/USED NUCLEAR FUEL (SNF/UNF), AND LONG-LIVED ALPHA/TRANSURANIC RADIOACTIVE WASTE (TRU)**

This track covers all long-lived alpha/TRU waste, SNF and HLW operations from generation and storage through characterization, treatment and disposal. It also covers associated technology development and deployment; recycling/reprocessing strategies and technologies; periodic progress updates oriented to specific achievements in waste removal and disposal activities, and overlapping issues including interim and final disposition strategies for SNF and HLW, associated environmental permitting and monitoring of stored waste, waste processing alternatives, waste form, deep geologic disposal and operating facility performance and risk assessment, and the impacts of directly associated regulations and standards.

**Related Sessions: 1, 2, 3, 5, 10, 12, 13, 14, 23, 28, 29a, 30, 36, 37, 38, 39, 43, 49, 50, 57, 58, 59, 70A, 70B, 75, 76, 78, 82, 93, 94, 95, 96A, 102, 104, 106, 113, 114, 115, 116, 117, 118, 126**

## **3 - LOW-LEVEL WASTE (LLW), INTERMEDIATE LEVEL WASTE (ILW), MIXED WASTE (MW), BY PRODUCT MATERIAL, TENORM, NORM RESIDUES & DEPLETED URANIUM**

This track encompasses operations from generation through treatment and disposal; technology development, demonstration, and deployment; overlapping issues including waste minimization, waste characterization and analysis, effluent monitoring, waste form and facility performance assessment, regulations and standards; and for all types of facilities from hospitals, accelerators, research reactors, government facilities, disposal sites, etc. This track covers waste management of Uranium or Thorium ores as well as "Greater than Class C - LLW", byproducts or tailings, NORM residues and waste, and TENORM. This track also includes radioactive materials, articles and consumer products.

**Related Sessions: 1, 2, 7, 12, 17, 18, 21, 22, 27, 40, 46, 47, 49, 50, 53, 54, 60, 61, 72, 73, 74, 82, 83, 91, 96b, 98, 104, 112, 125, 126**

## **4 - NUCLEAR POWER PLANT (NPP) WASTE MANAGEMENT**

This track encompasses waste characterization and minimization, treatment, packaging and management of NPP operational wastes and NPP SNF/UNF storage and management.

**Related Sessions: 17, 18, 20, 21, 22, 24, 41, 46, 47, 53, 54, 72, 77, 78, 83, 89, 90, 105, 112**



## **5 - PACKAGING AND TRANSPORTATION (PAT)**

This track includes all activities and issues related to the safe, secure and economical packaging and transportation of radioactive materials. This includes HLW, TRU, LLW, ILW and MW; fresh and irradiated nuclear fuel; contaminated media and debris; isotopes and radioactive sources; Uranium Hexafluoride, etc. Sessions include international regulatory activities, issues, and initiatives; packaging development and related issues; logistics and transportation operations, including large items from decommissioning; integrated planning and scheduling; status and issues for large shipping campaigns; and stakeholder and public interactions and issues.

**Related Sessions: 1, 2, 48, 55, 56, 104, 111, 119**

## **6 - DECONTAMINATION & DECOMMISSIONING (D&D)**

This track includes all aspects of D&D from shutdown and planning to license termination and/or greenfield, including characterization, decontamination, dismantling, demolition, waste handling, final survey, and associated new technology development for both government and commercial nuclear power and non-power facilities. It also includes decommissioning technologies and program strategies worldwide, as well as the regulatory aspects.

**Related Sessions: 1, 2, 8, 9, 12, 13, 14, 19, 20, 32, 35, 41, 50, 62, 71, 77, 81, 83, 84, 92, 99, 108, 109, 112, 127**

## **7 - ENVIRONMENTAL REMEDIATION (ER)**

This track includes all activities associated with the assessment, cleanup, and closure of contaminated sites. Sessions will explore how to restore and protect human health and the environment through investigation, cleanup, closure, and long-term site management. The focus is on above and below ground remedial actions and cleanup activities including site inspection, characterization and evaluation; sampling and analysis; compliance monitoring; resolving regulatory issues that impact cleanup; aquifer and soil remediation; managing waste resulting from cleanup activities; remedial design and implementation; accelerating cleanup through technological or process improvements; closure; sustainable green remediation processes and legacy management/long-term stewardship.

**Related Sessions: 1, 2, 9, 11, 12, 15, 16, 24, 25, 32, 42, 63, 64, 65, 77, 79, 80, 82, 84, 85, 86, 87, 92, 99, 100, 110, 112, 120, 121, 124, 127**

## **8 - COMMUNICATION OF TECHNICAL ISSUES AND IMPACTS, EDUCATION AND TRAINING (CE&T)**

This track is divided into multiple diverse sessions including techniques for communicating technical issues, education and training, social justice and equity, intergovernmental and sustainability issues, knowledge management, public involvement and risk communications, preserving cultural resources while demolishing aging facilities and infrastructure. It incorporates a broad range of issues that shape decisions involving waste management, including cultural, equity, social, environmental, policy, communications, training and education. It also addresses environmental assessment issues (Environment Impact Statements) in the context of the US National Environmental Policy regulations.

**Related Sessions: 1, 3, 6, 10, 11, 13, 14, 23, 26, 44, 45, 52B 66, 85, 86, 93, 94, 99, 102, 113, 122, 123**

## **9 - SPECIAL TOPICS AND MULTI-TRACK CROSS CUTTING TECHNOLOGY(ST)**

This track includes all special topics including the aspects of US and non-US international safety, security, and safeguards and US Homeland and international security issues. It also includes technical track crosscutting sessions or special WM topics on programs associated with orphan and sealed sources, integrated risk management, modeling, compliance activities, criteria and standards development, Natural Resource Damage Assessment (NRDA), technology deployment, instruments, filtration, advanced technologies, extreme environment operations enabling technologies, technology driven program implications and drivers, and/or other technical crosscutting issues that involve multiple waste forms or radioactive materials.

**Sessions related to this Track: 1, 6, 27, 43, 58, 67, 85, 86, 88, 96b, 97, 106, 107, 123, 124, 126**

#	<b>Technical Program - Schedule at a Glance -</b>  <b>Annotated Session Titles</b> <i>(for full session titles, please see individual listing)</i>	Time	Room	1: Policies/Programs	2: HLW/SNF/TRU	3: L/ILW, NORM	4: Nuclear Power Pl.	5: Packag./Trans.	6: D&D	7: Environ. Rem.	8: Commun., Ed. & T	9: Special Topics	Finland / Sweden	Fukushima Related
				X	X	X	X	X	X	X	X	X	X	X
<b>Monday Morning, March 3</b>				<b>The 9 WM Tracks for Subject Reference</b>										
1	WM Symposia 2014 Plenary Session	8:00	301CD	X	X	X	X	X	X	X	X	X	X	X
2	Panel: Hot Topics in US DOE Environmental Management	10:00	102BC	X	X	X	X	X	X					
3	Panel: Finland/Sweden Featured Nations; National Programs and Local Views	10:00	105AB	X	X						X		X	
5	Recent Developments with High Level Radioactive Waste Glass	10:00	106C		X									
6	Panel: Establishing A Safety Culture through Human Performance Improvement	10:00	103AB							X	X			
7	Waste Certification, Acceptance and Disposal for LLW	10:00	106B		X								X	
8	D&D of Nuclear Facilities (Non-Power Generating Facilities) – Part 1 of 2	10:00	102A					X						
9	Environmental Remediation Progress Toward Closure of Contaminated Sites	10:00	101C					X	X					
10	Communicating with Regulators on Radioactive Waste Issues	10:00	106A	X	X						X			
11	From Community Closure Perspectives to Web-Based Tools for ER Cleanup	10:00	105C							X	X			
12	Accomplishments and Challenges at the DOE Hanford Site	10:00	101B	X	X	X			X	X				
<b>Monday Afternoon, March 3</b>														
13	Panel: Finland/Sweden Featured Nations: Siting Status and Issues	1:30	105AB	X	X				X		X		X	
14	Panel: Finland/Sweden Featured Nations: A Licensing Update	3:15	105AB	X	X				X		X		X	
15	Panel: Regulatory Challenges of Legacy Sites - IAEA Forum - Part 1 of 2	1:30	104AB	X						X				
16	Panel: Regulatory Challenges - Progress in Bi-Lateral Cooperation - Part 2 of 2	3:15	104AB	X						X				
17	Panel: Hot Topics in US Commercial LLW Management	1:30	103AB		X	X								
18	Selected Key Topics in US Commercial LLW Management	3:15	102A		X	X								
19	D&D of Nuclear Facilities (Non-Power Generating Facilities) - Part 2 of 2	1:30	102A					X						
20	D&D of Nuclear Power Plants – Emerging Issues and Strategies	3:15	103AB			X		X					X	
21	Emerging Treatment Technologies for LLW, ILW and Mixed Waste	1:30	106C		X	X							X	
22	Worldwide Perspectives of Radioactive WM -Challenges and Solutions	1:30	105C	X	X	X								
23	The US Repository Program after the Blue Ribbon Commission	1:30	106A	X	X						X			
24	Panel: Risk Regulations for Radioactive Waste Management	1:30	102BC	X		X			X					
25	Panel: US DOE Office of Legacy Management – A Vision	3:15	102BC						X					
26	Engaging Citizens - Lessons Learned From Around the World	1:30	106B							X			X	
27	Worldwide Management of Spent and Disused Radioactive Sealed Sources	1:30	101B		X							X		
28	Perspectives on the US DOE Hanford HLW Leaking Tank - AY-102	1:30	101C		X									
29A	TRU Hot Cell Operations and Lessons Learned	3:15	101C		X									
29B	Workshop: US DOE Contracting Improvements and New Directions	1:30	301A		X									
30	Posters: HLW/ SNF/ TRU and Long Lived Alpha	1:30	1 <sup>st</sup> Foyer		X								X	
31	Student Posters: The Next Generation - Industry Leaders of Tomorrow	1:30	Exhibit Hall	X										
<b>Tuesday Morning, March 4</b>														
32	Panel: US DOE Featured Site: Hanford - Part 1 of 2	8:30	102BC	X					X	X				
34	Panel: Emerging Issues That Challenge Traditional Contractor Roles- Worldwide	8:30	105AB	X					X					
35	Panel: International Panel on Safety Culture in WM and D&D	8:30	104AB	X					X					X
36	Finland/Sweden Featured Nations-KBS-3 Disposal Method Technology Develop.	8:30	105C	X	X								X	
37	Processing of Complex Radioactive High Level Salt Waste	8:30	106A		X									
38	Separations for Recycle of Used Nuclear Fuel	10:15	106A		X									
39	Tank Waste Storage and Retrieval of HLW	8:30	106B		X									
40	Performance of Disposal Systems, Facilities and Sites for LLW – Part 1 of 2	8:30	101B			X								
41	D&D of Nuclear Power Plants	8:30	102A			X		X					X	
42	ER Post Closure Challenges and Long Term Stewardship/Legacy Management	8:30	101C						X					
43	Subsurface Mass Transport and Assessment of Geological Disposal Systems	8:30	106C		X							X	X	
44	Panel: Graduating Students and New Engineers- Wants and Needs	8:30	103AB	X						X				
45	Panel: Young Professionals in Nuclear Science and Engineering	10:15	103AB	X						X			X	
46	Posters: LLW, ILW, Mixed Waste, NORM and TENORM	8:30	1 <sup>st</sup> Foyer		X	X							X	

#	<b>Technical Program - Schedule at a Glance -</b>  <b>Annotated Session Titles</b> <i>(for full session titles, please see individual listing)</i>	Time	Room	1: Policies/Programs	2: HLW/SNF/TRU	3: L/ILW, NORM	4: Nuclear Power Pl.	5: Packag./Trans.	6: D&D	7: Environ. Rem.	8: Commun., Ed. & T	9: Special Topics	Finland / Sweden	Fukushima Related
<b>Tuesday Morning (Continued), March 4</b>				<b>The 9 WM Tracks for Subject Reference</b>										
47	Posters: Nuclear Power Plant Waste Management	8:30	1 <sup>st</sup> Foyer			X	X						X	X
48	Posters: Packaging and Transportation	8:30	1 <sup>st</sup> Foyer					X						
<b>Tuesday Afternoon, March 4</b>														
49	Panel: US DOE Featured Site: Hanford – Office of River Protection - Part 1 of 2	1:30	102BC	X	X	X								
50	Finland/Sweden Featured Nations: NPP D&D and Waste Disposition	1:30	105C	X	X	X			X				X	
51	Panel: US DOE - Energy Facility Contractors Group's Knowledge Portal Review	1:30	104AB	X										
52A	Panel: Addressing the Small Business Barriers in Contracting with the US DOE	3:15	104AB	X										
52B	Roundtable: Background /Analysis of the Recent US DOE FY 2015 Budget	3:15	212BC	X							X			
53	Panel: US Nuclear Power Plant Waste Management - LLW Disposal Issues	1:30	103AB			X	X							
54	Panel: US Nuclear Power Plant Waste Management - LLW Processor Issues	3:15	103AB			X	X							
55	Efficiencies and Lessons Learned in Transportation	1:30	106C					X						
56	Panel: Challenges in Manufacturing of Rad Material Packages & Containers	3:15	105AB					X						
57	Panel: Progress in Dealing with the World's Stockpile of Used Nuclear Fuel	1:30	105AB		X									
58	Geologic Disposal Methodologies and Modeling	1:30	106A		X							X		
59	Stabilization/Immobilization of HLW, SNF/UNF and Long-lived Alpha/TRU	1:30	106B		X									
60	Radiological Characterization Methods and Data Analysis - Part 1 of 2	1:30	102A			X							X	
61	Radiological Characterization Methods and Data Analysis - Part 2 of 2	3:15	102A			X								
62	Waste Optimization/Minimization and Harmonization During D&D	1:30	101C						X				X	
63	Innovative Field Monitoring for Environmental Remediation	1:30	101B							X				
64	Deep Vadose Zone Characterization and Remediation Technologies	3:15	106C							X				
65	Posters: Environmental Remediation	1:30	1 <sup>st</sup> Foyer							X				X
66	Posters: Communications, Education and Training	1:30	1 <sup>st</sup> Foyer								X			
67	Posters: Special Topics and Track Cross Cutting Technology Topics	1:30	1 <sup>st</sup> Foyer									X		
<b>Wednesday Morning, March 5</b>														
68	Panel: US DOE Procurement and Contracting Opportunities	8:30	104AB	X										
69	Panel: Small Business Opportunities with DOE & Prime Contractors	10:15	104AB	X										
70A	International Deep Repository Progress – Part 1 of 3	8:30	105AB		X									
70B	Panel: International Deep Repository Progress - Part 2 of 3	Aft70A	105AB		X									
71	Panel: IAEA International Decommissioning Network: Collaboration and Sharing	8:30	102BC						X					X
72	Panel: 10 CFR Part 61.55 Waste Classification Scheme	8:30	103AB			X	X							
73	Panel: US DOE Mixed Waste: Dealing with Problematic Waste Streams	10:15	103AB			X								
74	Regulatory and Programmatic Issues and Solutions for LLW	8:30	101C			X								
75	Geologic Disposal Phenomenology and R&D	8:30	105C		X								X	
76	TRU Waste Optimization and Progress	8:30	106A		X									
77	An Update on the Fukushima Recovery Project & Its Global Impact	8:30	102A				X		X	X				X
78	Nuclear Power Plant Onsite SNF/UNF Storage	8:30	101B		X		X							
79	ER Challenges - Alternative Approaches to Achieving End State	8:30	106B							X				
80	Groundwater Remediation Projects	8:30	106C							X				
81	Posters: D&D	8:30	1 <sup>st</sup> Foyer						X					X
<b>Wednesday Afternoon, March 5</b>														
82	Panel: US DOE Featured Site: Los Alamos National Laboratory	1:30	102BC	X	X	X				X				
83	Panel: Risk & Dose Analysis for D&D of NPPs and Complex Facilities	1:30	104AB			X	X		X					
84	Innovations to Nuclear D&D: Progress in Fukushima	3:15	104AB						X	X				X
85	Panel: Informed Performance Based Decision Making	1:30	105A							X	X	X		
86	Panel: Integrated Risk Assessment Methods, Tools & Decision Analysis Support	3:15	105A							X	X	X		
87	Technical Innovations in Environmental Remediation and Site Closure	1:30	106A							X				
88	The Aging US DOE Infrastructure- Critical Investments/Alternatives	1:30	106B	X			X					X		
89	Management of Nuclear Power Plant Dry Waste	1:30	106C				X							

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				1: Policies/Programs	2: HLW/SNF/TRU	3: L/ILW, NORM	4: Nuclear Power Pl.	5: Packag./Trans.	6: D&D	7: Environ. Rem.	8: Commun., Ed. & T	9: Special Topics	Finland / Sweden	Fukushima Related
<b>Wednesday Afternoon (Continued), March 5</b>														
90	Management of Nuclear Power Plant Liquid and Wet Waste	3:15	After #89			X								X
91	Operating Experience in the Treatment and Storage of LLW	1:30	102A	X					X					
92	Panel: UK/US Partnering Across the Pond - Accomplishments Lessons Learned	1:30	103AB	X	X					X				
93	Storage of Spent/Used Nuclear Fuel and Solid HLW	1:30	105C	X	X						X			
94	Geologic Disposal Design & Engineering	1:30	101C		X						X		X	
95	Panel: Challenges in DOE HLW Tank Management	3:15	103AB		X									
96A	International Deep Repository Progress – Part 3 of 3	1:30	101B											
96B	Performance of Disposal Systems, Facilities and Sites for LLW – Part 2 of 2	3:15	101B			X						X		
97	Project Management Improvements - Scope, Cost, & Schedule Control	1:30	105B	X										
98	Non-Paper Poster Topic for Emerging Issues and Late Abstracts	1:30	1 <sup>st</sup> Foyer		X	X						X		
<b>Thursday Morning, March 6</b>														
99	Panel: Technology Support and Implementation for Cleanup of Fukushima NPP	8:30	104AB	X					X	X	X			X
100	Panel: Oak Ridge Reservation Innovative Cleanup Approaches	8:30	103AB	X						X				
102	Records, Knowledge and Memory (RK&M) for Nuclear Geologic Repositories	8:30	102BC		X						X		X	
103	Worldwide WM Regulatory and Oversight Crosscutting Programs	8:30	105AB	X										X
104	Roundtable: Waste Management Energy Facilities Contractor Operating Group	8:30	106A	X	X	X	X							
105	Non-US Nuclear Power Plant Waste Treatment and Alternatives	8:30	106B				X							
106	Crosscutting Performance Assessments Risk Management, and Modeling	10:15	106B		X							X	X	
107	Advances in Nuclear Safety Management	8:30	106C									X		
108	D&D of US DOE Facilities	8:30	102A						X					
109	Application of Innovative D&D Technologies	8:30	101C						X				X	
110	US - Formerly Utilized Sites Remedial Action Program and Other Army Projects	8:30	101B							X				
111	Package Design	8:30	105C					X						
<b>Thursday Afternoon, March 6</b>														
112	Panel: Management of Radioactive Waste Following a Major Nuclear Accident	1:30	102BC	X		X	X		X	X				X
113	Panel: Prospects for an International (Multi-Country) Repository	1:30	105AB	X	X						X			
114	Panel: Records, Knowledge & Memory for Nuclear Geologic Repositories	1:30	103AB		X								X	
115	US DOE Tank Waste Program Integration	1:30	105C		X									
116	Storage and Retrieval of HLW	3:15	105C		X									
117	HLW Retrieval, Closure and Processing Operational Experience	1:30	102A		X									
118	Waste Form Development, Demonstration, and Characterization	3:15	102A		X									
119	Transport Subsequent to Storage	1:30	106A					X					X	
120	ER of Radioactively/Chemically Contaminated Sites in Urban & Suburban Areas	1:30	106B							X				
121	Sustainable Green Remediation Processes	3:15	106B							X				
122	Community Engagement and Capacity Building Approaches	1:30	106C								X	X		
123	Workplace Management and Performance Solutions	3:15	106C								X	X		
124	Radiological Dispersion Devices & Other Nuclear Weapons of Mass Destruction	1:30	101B							X		X		
125	Non Radiological Characterization for LLW, ILW, MW, NORM and TENORM	2:45	101B			X								
126	Crosscutting Performance Assessments Risk Management, and Modeling	1:30	101C		X	X						X		
127	Panel: US DOE Featured Site: Lexington, KY Office (Portsmouth & Paducah)	1:30	104AB	X					X	X				
<b>Friday, March 7</b>														
N/A	NRC Public Meeting - Status of Low-Level Radioactive Waste Disposal Rulemaking and Strategic Assessment of Low-Level Waste Regulatory Program	8:30	Renaissance Salon 7 & 8			X	X				X	X		

Sessions are subject to change. Please check signage onsite for the most up-to-date information.

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## March 3, Monday AM

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### Session 1

**8:00 AM - 9:45 AM Room 301CD**

#### Panel: WM Symposia 2014 Plenary Session

Co-Chairs: **Jim Fiore**, *Fiore Consulting*; **James Gallagher**, *Gallagher Consulting*  
Lead Organizer: **Jim Fiore**, *Fiore Consulting*  
Add'l Organizers: **Gary Benda**, *WM Symposia*; **James Voss**, *Predicus, LLC*  
Panel Reporter: **John Mathieson**, *NDA (United Kingdom)*  
Paper Reviewer: **Leif Eriksson**, *Nuclear Waste Dispositions*

The plenary panel will focus on government and industry world leaders speaking on the pressing issues facing radioactive waste management in 2014 and beyond. Two papers are also prepared for this panel.

**Panelists include:** **Christopher Eckerberg**, *President, SKB (Sweden)*; **Tiina Jalonen** representing **Reijo Sundell**, *President, Posiva OY (Finland)*; **John Lehw**, *Senior Vice President, CH2M HILL Nuclear Business Group* and **David Huizenga**, *Senior Advisor for Environmental Management, US DOE*.

- 1. Achievements and Current Challenges for the Swedish Nuclear Waste Management Program - 14637**  
**Christopher Eckerberg**, *Swedish Nuclear Fuel & Waste Mgmt Co. AB (Sweden)*
- 2. Evolution of Waste Management Options in Finland: From Plans to Implementation - 14493**  
**Reijo Sundell**, *Posiva Oy (Finland)*

### Session 2

**10:00 AM - 12:00 PM Room 102BC**

#### Panel: Hot Topics in US DOE Environmental Management

Co-Chairs: **James Gallagher**, *Gallagher Consulting*; **Martin Schneider**, *Exchange Monitor Publications & Forums*  
Lead Organizer: **Jim Fiore**, *Fiore Consulting*  
Add'l Organizers: **Gary Benda**, *WM Symposia*; **Mark Gilbertson**, *US DOE-EM*  
Panel Reporter: **Linda Lehman**, *Consultant*

This panel will focus on senior US DOE Managers from Washington, DC speaking on the pressing issues facing US DOE-EM sites.

**Panelists include:** **Melody Bell**, *Assistant Deputy Assistant Secretary (DAS) for Human Capital and Corporate Services*; **Jack Craig**, *Acting Associate Principal DAS*; **Dennis Deziel**, *Assistant DAS for Program Planning and Budget*; **Mark Gilbertson**, *DAS for Site Restoration*; **Frank Marcinowski**, *DAS for Waste Management*; **Matthew Moury**, *DAS for Safety, Security and Quality Programs*; **Jack Surash**, *DAS for Acquisition and Project Management* and **Kenneth Picha**, *DAS for Tank Waste and Nuclear Material, US DOE*.

### Session 3

**10:00 AM - 12:00 PM Room 105AB**

#### Papers/Panel: Finland/Sweden Featured Nations: National Program and Local Views

Co-Chairs: **George Dials**, *B&W Conversion Services, LLC*; **Irena Mele**, *IAEA (Austria)*  
Lead Organizer: **Leif Eriksson**, *Nuclear Waste Dispositions*  
Add'l Organizers: **Robert Havel**, *SKB (Sweden)*; **Magnus Holmqvist**, *SKB International AB (Sweden)*; **Esko Tusa**, *Fortum Power and Heat Oy (Finland)*  
Panel Reporter: **Keith Miller**, *National Nuclear Laboratory (United Kingdom)*  
Paper Reviewer: **Leif Eriksson**, *Nuclear Waste Dispositions*

This panel will discuss the WM activities in two countries, Finland and Sweden, our 2014 featured nations. After presentations, the panel will interact and discuss with the WM attendees the status of the countries' WM programs and policies.

**Panelists include:** **Herrko Plit**, *Deputy Director General, Ministry of Employment and the Economy, Energy Department, Nuclear Energy and Fossil Fuels (Finland)*; **Vesa Jalonen**, *Chairman of the Municipal Council, Eurajoki Municipality (Finland)*; **Ingvar Persson**, *Swedish National Council for Nuclear Waste (Sweden)* and **Jacob Spangenberg**, *Mayor, Municipality of Osthhammar (Sweden)*.

- 1. Finnish Nuclear Waste Management Policy as Part of the Nuclear Energy Programme -**  
**Jaana Avolahti**, **Herkko Plit**, *Ministry of Employment and the Economy (Finland)*
- 2. Local Community Involvement - The Finnish Example -**  
**Vesa Jalonen**, *Municipality of Eurajoki (Finland)*

**3. The Division of Responsibilities between the State and Power Companies in the Management of Spent Fuel and Nuclear Waste in Sweden** - 14593

*Ingvar Persson, Swedish National Council for Nuclear Waste (Sweden)*

**4. Local Community Involvement - The Swedish Example** -

*Jacob Spangenberg, Municipality of Osthhammer; Marie Berggren, The Municipality of Östhammar (Sweden)*

**Session 4**

**Session Withdrawn**

**Session 5**

**10:00 AM - 12:00 PM Room 106C**

**Recent Developments with High Level Radioactive Waste Glass**

Co-Chairs: **Jonathan Bricker**, Savannah River Remediation, LLC; **Joseph Ryan**, Pacific Northwest National Laboratory

Lead Organizer: **Sharon Marra**, Savannah River National Laboratory

Add'l Organizers: **Jonathan Bricker**, SRR, LLC; **John Gregory**, AREVA Federal Services, LLC

Paper Reviewer: **Joseph Ryan**, PNNL

**10:05 The Effect of Foaming and Silica Dissolution on Melter Feed Rheology during Conversion to Glass** - 14473

*Jose Marcial, Pavel Hrma, Jaehun Chun, Michael Schweiger, Pacific Northwest National Laboratory*

**10:30 Incorporation of Noble Metals in High Level Waste Borosilicate Glass: Focus on Vitrification Process Developments** - 14067

*Virginie Labe, Jean Francois Hollebecque, Philippe Gruber, Stéphane Lemonnier, Helene Nonnet, CEA Marcoule; Eric Chauvin, Eric Boudot, AREVA; Jean Puig, CEA (France)*

**10:55 Kinetics of Cold-Cap Reactions for Vitrification of Nuclear Waste Glass Based on Simultaneous Differential Scanning Calorimetry-Thermogravimetry (DSC-TGA) and Evolved Gas Analysis (EGA)** - 14517

*Carmen Rodriguez, Jaehun Chun, David Pierce, Michael Schweiger, Pavel Hrma, Pacific Northwest National Laboratory*

**11:20 Characterizing a High-Level Waste Cold Cap via Elemental and Structural**

**Configuration** - 14185

*Derek Dixon, Pavel Hrma, Michael Schweiger, Pacific Northwest National Laboratory*

**Session 6**

**10:00 AM - 12:00 PM Room 103AB**

**Panel: Establishing a Robust Safety Culture through Human Performance Improvement**

Co-Chairs: **Jim Schildknecht**, Lucas Engineering and Management Services; **Tony Umek**, Fluor Corporation  
Lead Organizer: **Kim Auclair**, KD Auclair & Assoc., LLC  
Add'l Organizers: **Judith Connell**, Fluor; Jim Schildknecht, Lucas Engineering and Management Services  
Panel Reporter: **Judith Connell**, Fluor

This panel focuses on the critical role that Human Performance Improvement (HPI) initiatives can play in establishing and sustaining a robust culture of operational excellence. HPI initiatives comprise a variety of elements, such as strong sponsorship, sound training courses, and management commitment. However, the single and most important factor is integrating HPI with other quality, reliability, safety initiatives and programs that align with the organization's mission and vision. Building a strong safety culture is like a marathon, not a sprint: it demands leadership, tenacity and trust. HPI is becoming an increasingly important tool to improving quality and safety performance, operational effectiveness, and the "bottom line." Come share a spirited discussion with our expert panelists on the importance of HPI and organizational culture in achieving operational excellence.

**Panelists include:** **Anthony Umek**, Vice President, Fluor Government Group; **Mike Williams**, COO/Chief Fossil Officer, Luminant Power; **John McDonald**, Sr. Manager, ESH&Q, Washington River Protection Solutions; **Grover Hettel**, Vice President, Operations, Energy-Northwest, and another representative from Institute for Nuclear Power Operation (INPO) or the commercial nuclear power industry.

## Session 7

10:00 AM - 12:00 PM Room 106B

### Waste Certification, Acceptance and Disposal for LLW, ILW, MW, NORM and TENORM

Co-Chairs: **Gabriele Bandt**, TÜV NORD EnSys Hannover (Germany); **Erich Tiepel**, Golder Assoc.  
Lead Organizer: **Heinz Kroeger**, TÜV NORD EnSys Hannover (Germany)  
Add'l Organizers: **Gabriele Bandt**, TÜV NORD EnSys Hannover; **Walter Josephson**, WorleyParsons Polestar  
Paper Reviewer: **Gabriele Bandt**, TÜV NORD EnSys Hannover

**10:05 Development and Qualification of Steel Waste Container for ILW to be Disposed in Geological Repository - 14274**

**Arne Larsson**, Liselotte Ekström, Studsvik Nuclear AB; Tommy Hansson, Vattenfall Ringhals (Sweden)

**10:30 TENORM Waste Processing and Disposal of Filter Cake - 14371**

**Alejandro Lopez**, Heath Downey, AMEC

**10:55 Dose Rate Profile Surrounding a Waste Repository - 14281**

**Jenelle Parson**, Alexander Brandl, Colorado State University; Roman Koppitsch, Norbert Zoeger, Nuclear Engineering Seibersdorf (Austria)

## Session 8

10:00 AM - 12:00 PM Room 102A

### D&D of Nuclear Facilities (Non-Power Generating Facilities) Part 1 of 2

Co-Chairs: **Michelle Claggett**, Project Enhancement Corporation; **Fred Sheil**, Sheil Consulting, Ltd. (UK)  
Lead Organizer & Paper Reviewer: **Fred Sheil**, Sheil Consulting, Ltd.  
Add'l Organizers: **Anthony Banford**, National Nuclear Laboratory (United Kingdom); **Julia Tripp**, INL

**10:05 The D&D Program of GB1 Gaseous Diffusion Plant - 14452**

**Frederic Chambon**, AREVA Federal Services, LLC; **Serge Dumond**, AREVA Enrichment Business Unit (France); **Richard Vinoche**, AREVA NC (France); **Jacques Bonnetaud**, Philippe Seurat, EURODIF PRO (France)

**10:30 Nuclear Aircraft Carrier Inactivation – Approach for Waste Management and Exposure Reduction - 14201**

**Irin Hall**, **Ashley Williams**, Kimberly Grubb, Newport News Shipbuilding

**10:55 Actual Results of D&D in Uranium Refining and Conversion Plant - 14076**

**Noritake Sugitsue**, Nobuo Takahashi, Yasuyuki Morimoto, Yoshio Tanaka, Japan Atomic Energy Agency (Japan)

**11:20 Status and Future Plan of Decommissioning of the Plutonium Fuel Fabrication Facility - 14089**

**Meiji Kuba**, Masatoshi Watahiki, Hiroshi Hirano, Shinnichiro Ishikawa, Hisato Sato, JAEA (Japan)

## Session 9

10:00 AM - 12:00 PM Room 101C

### Environmental Remediation Progress toward Closure of Contaminated Sites

Co-Chairs: **Mark Frei**, Longenecker & Associates, Inc.; **Kurt Gerdes**, US DOE

Lead Organizer: **Kurt Gerdes**, US DOE

Add'l Organizers: **Mark Frei**, Longenecker & Assoc.; **David Wallace**, Parsons Brinckerhoff

Paper Reviewer: **Latrincy Bates**, US DOE

**10:05 Success with Soil Vapor Extraction, 200-PW-1 Operable Unit, Hanford Site, Richland, WA - 14017**

**Mark Byrnes**, Virginia Rohay, Sally Simmons, CH2M HILL PRC; **John Morse**, Gregory Sinton, US DOE; **Emerald Laija**, US EPA

**10:30 Improving Five-Year Reviews at Federal Facility Superfund Sites - 14288**

**Letitia O'Connor**, **Jerry DiCerbo**, US DOE; **Monica McEaddy**, US EPA

**10:55 Environmental Cleanup of the East Tennessee Technology Park - Year Two - A Status Report - 14060**

**Allen Schubert**, URS | CH2M Oak Ridge LLC

**11:20 Russian Experience in Regulatory Supervision of the Uranium Mine and Milling Legacy Sites - 14242**

**Evgeny Metlyayev**, Nataliya Shandala, Federal Medical Biophysical Centre (Russia); **Nadezhda Potsyapun**, Federal Medical Biological Agency (Russian Federation)

## Session 10

10:00 AM - 12:00 PM Room 106A

### Communicating with Regulators on Radioactive Waste Issues

Co-Chairs: **Catherine Alexander**, US DOE; **Kimberly Brinkley**, SC Dept. of Health & Environmental Control  
Lead Organizer: **Jeannette Hyatt**, Savannah River National Laboratory  
Add'l Organizer: **Catherine Alexander**, US DOE  
Paper Reviewer: **Linda Suttora**, US DOE

#### 10:05 Double-Shell Tank System Permit Modification Options to Consider to Support Waste Feed Delivery to the Waste Treatment Plant - 14642

**Andrea Hopkins**, Washington River Protection Solutions, LLC; **Eric Van Mason**, Kelly Elsethagen, Columbia Energy & Environmental Services, Inc.; **Ellen Mattlin**, US DOE Office of River Protection; **Felix Miera**, Miera Environmental Consulting, Inc.

#### 10:30 Development and Implementation of Regulator Approved Sampling and Analysis and Quality Assurance Program Plans for Underground Radioactive Waste Tank Residuals Characterization at the Savannah River Site - 14412

**Joseph Pavletich**, Mark Mahoney, Savannah River Remediation, LLC

#### 10:55 Risk Evaluations Differ Depending Upon Agency Performing Them: Implications for US DOE - 14139

**Joanna Burger**, Rutgers University; **Charles Powers**, CRESO - Vanderbilt University; **Michael Gochfeld**, Robert Wood Johnson Medical School; **David Kosson**

## Session 11

10:00 AM - 12:00 PM Room 105C

### From Community Closure Perspectives to Web-Based Tools for ER Cleanup Programs

Co-Chairs: **Jeannette Hyatt**, Savannah River National Laboratory; **Margaret MacDonell**, ANLry  
Lead Organizer & Paper Reviewer: **Jeannette Hyatt**, SRNL  
Add'l Organizers: **W.T. (Sonny) Goldston**, EnergySolutions; **Margaret MacDonell**, ANL

#### 10:05 Stigma, Fear and Forgiveness: Perspectives on Environmental Legacy and Community Closure Following Remediation Projects - 14487

**Robert Zelmer**, Environmental Legacy Associates; **Brian Geddes**, AMEC Environment & Infrastructure; **Heather Kleb**, Canadian Nuclear Association (Canada); **Ammar Talic**, Psykolog Consulting (Sweden); **Liliana Benitez**, University of Victoria (Canada)

#### 10:30 US DOE Dashboards Eliminate Redundancy, Improve Accuracy, and Speed Decision-Making - 14363

**Jon Peschong**, US DOE; **Marisa Renevitz**, Longenecker & Associates; **Brett Simpson**, Vista Engineering Technologies

#### 10:55 Implementation of an Integrated Information Management System for the US DOE Hanford Tank Farms Project - 14224

**Scott Joyner**, Mark Knight, **Richard Garrett**, Washington River Protection Solutions

#### 11:20 D&D Knowledge Management Information Tool - 2014 - 14190

**Himanshu Upadhyay**, Leonel Lagos, Walter Quintero, Peggy Shoffner, FIU; **John De Gregory**, US DOE

## Session 12

10:00 AM - 12:00 PM Room 101B

### Accomplishments and Challenges at the US DOE Hanford Site

Co-Chairs: **Briant Charboneau**, US DOE; **Dawn Wellman**, Pacific Northwest National Laboratory  
Lead Organizer: **Dawn Wellman**, PNNL  
Add'l Organizers: **Briant Charboneau** and **John Morse**, US DOE  
Paper Reviewer: **John Morse**, US DOE

#### 10:05 Pulling History from the Waste Stream: Identification and Collection of Manhattan Project and Cold War Era Artifacts on the Hanford Site - 14085

**Thomas E. Marceau**, Thomas Watson, Mission Support Alliance, LLC

#### 10:30 Automation of Planning, Scheduling, and Tracking of Groundwater Monitoring Sampling and Analysis Requirements at the Hanford Site, Richland, WA - 14109

**Stephen Trent**, Karen Waters-Husted, Kelly Whitley, William Webber, CH2M HILL PRC; **Warren Brown**, Lockheed Martin Systems Information; **R. Douglas Hildebrand**, US DOE



**10:55 Hanford Tank Farms Double Shell Tank Space Challenges and Initiatives - 14440**  
*Paul Cavanah, Nick Kirch, Washington River Protection Solutions; Amy Ramsey, AEM Consulting*

**11:20 US DOE Hanford Network Upgrades and Disaster Recovery Exercise Support the Cleanup Mission Now and Into the Future - 14303**  
*Todd Eckman, Mission Support Alliance; Ali Hertzal, JJ Lane, Lockheed Martin*

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## March 3, Monday PM

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### Session 13

**1:30 PM - 3:10 PM Room 105AB**

#### **Papers/Panel: Finland/Sweden Featured Nations: Siting Status and Issues**

Co-Chairs: **Charles McCombie**, *MCM Consulting, Arius Association (Switzerland)*; **Bo Strömberg**, *Swedish Radiation Safety Authority (Sweden)*  
Lead Organizer & Paper Reviewer: **Leif Eriksson**, *Nuclear Waste Dispositions*  
Add'l Organizers: **Robert Havel**, *SKB (Sweden)*; **Magnus Holmqvist**, *SKB International AB (Sweden)*; **Esko Tusa**, *Fortum Power and Heat Oy (Finland)*  
Panel Reporter: **Keith Miller**, *National Nuclear Laboratory (United Kingdom)*

This session will discuss the siting status and issues on our Featured Nations for WM2014, Finland and Sweden. After the four presentations, the panel will discuss with the audience related issues on their waste management siting programs.

**Panelists include: Matti Kojo**, *University of Tampere (Finland)*; **Olle Olsson**, *Vice President Strategy and Programmes, Svensk Kärnbränslehantering AB (SKB) (Sweden)*; **Erik Setzman**, *Head of Unit for Quality & Environment, SKB (Sweden)* and **Reijo Sundell**, *Posiva, (Finland)*.

- 1. ONKALO - From Concept to Reality - 14494**  
*Reijo Sundell, Timo Äikäs, Posiva Oy (Finland)*
- 2. Evolving Final Disposal Technology and Its Sociotechnical Challenges: Development of Canister Design and the Related Copper Corrosion Debate between 1978 and 2012 - 14270**  
*Matti Kojo, University of Tampere; Tapio Litmanen, University of Jyväskylä (Finland)*

- 3. Site Selection and Licensing - Challenges in Building and Maintaining Trust over Many Years - 14482** *Olle Olsson, SKB (Sweden)*
- 4. Preparing for Implementation, Construction and Public Support - The Added Value Programme - 14508**  
*Erik Setzman, SKB (Sweden)*

### Session 14

**3:15 PM - 5:00 PM Room 105AB**

#### **Papers/Panel: Finland/Sweden Featured Nations: A Licensing Update**

Co-Chairs: **Hans Codee**, *COVRA N.V. (Netherlands)*; **Betsy Forinash**, *US EPA*  
Lead Organizer & Paper Reviewer: **Leif Eriksson**, *Nuclear Waste Dispositions*  
Add'l Organizers: **Robert Havel**, *SKB (Sweden)*; **Magnus Holmqvist**, *SKB International AB (Sweden)*; **Esko Tusa**, *Fortum Power and Heat Oy (Finland)*  
Panel Reporter: **Angie Jones**, *AMEC*

This session will provide a licensing update on our Featured Nations for WM2014, Finland and Sweden. After the four presentations, the panel will discuss with the audience related issues on their licensing programs.

**Panelists include: Johan Anderberg**, *Swedish Radiation Safety Authority (Sweden)*; **Carl-Reinhold Bråkenhielm**, *Swedish National Council for Nuclear Waste (Sweden)*; **Kai Hämäläinen**, *STUK Radiation and Safety Authority (Finland)* and **Kari Rasilainen**, *VTT Technical Research Centre of Finland (Finland)*.

- 1. Transparency, Consent, and Democracy - 14640**  
*Carl Brakenhielm, Swedish National Council for Nuclear Waste/Uppsala University (Sweden)*
- 2. Regulatory Challenges in the Licensing of a Spent Nuclear Fuel Repository in Sweden - 14483**  
*Johan Anderberg, Swedish Radiation Safety Authority (Sweden)*
- 3. Regulatory Review and Assessment of the 2012 Construction License Application for an SNF Disposal Facility at Olkiluoto, Finland - 14243**  
*Jussi Heinonen, Risto Paltemaa, Kai Hämäläinen, STUK Radiation and Nuclear Safety Authority (Finland)*

**4. KYT2014 – Research Programme to Support Finnish Nuclear Waste Authorities** - 14245  
**Kari Rasilainen**, VTT Technical Research Centre of Finland; **Jaana Avolahti**, Ministry of Employment and the Economy; **Kaisa-Leena Hutri**, STUK Radiation and Nuclear Safety Authority (Finland)

### Session 15

**1:30 PM - 3:10 PM Room 104AB**

#### **Panel: Worldwide Regulatory Challenges of Radioactive Legacy Sites - IAEA Working Forum Part 1 of 2**

Co-Chairs: **Ray Clark**, US EPA; **Malgorzata K. Sneve**, Norwegian Radiation Protection Authority (Norway)

Lead Organizer: **Ray Clark**, US EPA

Add'l Organizers: **Mikhail Kiselev**, Federal Medical Biological Agency (Russia); **Nataliya Shandala**, Federal Medical Biophysical Centre (Russia);

**Malgorzata K. Sneve**, Norwegian Radiation Protection Authority

Panel Reporter: **Graham Smith**, GMS Abingdon Ltd (United Kingdom)

This session is divided into two parts: Part 1, provides an opportunity to share information about activities within the IAEA's International Working Forum on Regulatory Supervision of Legacy Sites (RSLs) programs on regulatory development specific to legacy situations, assessment of compliance, and training requirements and provisions. Feedback from the discussion will be provided to IAEA, to support the continuing development of international guidance on legacy issues.

**Panelists include:** **Russel Edge**, Division of Radiation, Transport and Waste Safety, Department of Safety and Security, IAEA (Austria); **Andrew Persinko**, Director, Decommissioning and Uranium Recovery Licensing, Division of Waste Management and Environmental Protection, US NRC; **Alexander Kim**, Deputy Chairman, Atomic Energy Committee (Kazakhstan); **Ilkhom Mirsaidov**, Director, Nuclear and Radiation Safety Agency (Republic of Tajikistan) and **David Shafer**, Acting Director, Office of Site Operations, Office of Legacy Management, US DOE.

### Session 16

**3:15 PM - 5:00 PM Room 104AB**

#### **Panel: Worldwide Regulatory Challenges of Radioactive Legacy Sites - Progress in Bi-Lateral Cooperation - Part 2 of 2**

Co-Chairs: **Ray Clark**, US EPA; **Malgorzata K. Sneve**, Norwegian Radiation Protection Authority (Norway)

Lead Organizer: **Ray Clark**, US EPA

Add'l Organizers: **Nataliya Shandala**, Federal Medical Biophysical Centre (Russia); **Graham Smith**, GMS Abingdon Ltd (United Kingdom); **Malgorzata K.**

**Sneve**, Norwegian Radiation Protection Authority (Norway)

Panel Reporter: **Graham Smith**, GMS Abingdon Ltd (United Kingdom)

This panel, Part 2, will focus on abnormal situations at legacy sites remaining from military and civilian nuclear technology developments in the 20th century, which raise many questions about safety and security, as well as environmental and human health protection. These complex legacy situations present significant challenges to comprehensive, balanced, effective and efficient regulatory supervision and therefore have become the subject of major bi-lateral agreements between respective national regulatory authorities. The panel members will present and discuss important developments at particular sites and illustrate the mutual support obtained through regulatory cooperation.

**Panelists include:** **Per Strand**, Deputy Director General, Norwegian Radiation Protection Authority (Norway). **Nataliya K. Shandala**, Deputy Director General, Federal Medical Biological Center (Russia); **Sergey Romanov**, Director, Southern Ural Biophysics Institute of the Federal Medical-Biological Agency (Russia); **Alexander Akleyev**, Director General, Urals Research Center for Radiation Medicine (Russia) and **Stuart Walker**, Superfund Remediation Program Radiation Lead, US EPA.

## Session 17

1:30 PM - 3:10 PM Room 103AB

### Panel: Hot Topics in US Commercial LLW Management

Co-Chairs: **Todd Lovinger**, *LLW Forum, Inc.*; **Leonard Slosky**, *Rocky Mountain LLW Board*  
Lead Organizer & Panel Reporter: **Todd Lovinger**, *LLW Forum, Inc.*  
Add'l Organizer: **Leonard Slosky**, *Rocky Mountain LLW Board*

This panel will focus on emerging issues in commercial LLW management in the US from the perspective of five active members of the Low-Level Radioactive Waste Forum, Inc.

State, compact, federal and industry officials will share their views on a variety of timely and significant topics related to LLW management and disposal. These topics include: 1) **Renee Echols** discussing current issues, technologies and matters of significance for brokers and processors of low-level radioactive waste including nuclear clean-up during challenging economic times; 2) **Larry Camper** discussing the Part 61 Site-Specific Performance Assessment Rulemaking, the Branch Technical Position on Concentration Averaging and Encapsulation, Updating of the LLW Strategic Assessment, Proposed Revisions to NUREG/BR-0204 re LLW Manifesting, and Future Commission Direction for the LLW Program; 3) **Billy Cox** providing industry perspectives on proposed revisions to NUREG BR-0204 re LLW Manifesting Guidance, including what is not optimal about current practice and ways to improve, with particular focus on the phantom 4; 4) **Rusty Lundberg** providing an update on issues, findings and recommendations from the LLW Forum's Disused Sources Working Group to the National Nuclear Security Administration/Global Threat Reduction Initiative on the management and disposition of disused sources that pose a threat to national security and 5) **Leigh Ing** providing an overview regarding proposed changes to the import/export rules and the White Paper on establishing the generator of low-level radioactive waste, as well as requirements and restrictions regarding waste type, origin, and volume.

**Panelists include:** **Renee Echols**, *Senior Vice-President of Sales and Marketing, Perma-Fix Environmental Services*; **Larry Camper**, *Director of the Division of Waste Management and Environmental Protection in the Office of Federal & State Materials & Environmental Management Programs, US NRC*; **Billy Cox**, *Senior Project Manager in Nuclear Chemistry, Electric Power Research Institute (EPRI)*; **Rusty Lundberg**, *Director of the Division of Radiation Control at the Utah Department of Environmental Quality* and **Leigh Ing**, *Consulting Supervisory Director at the*

*Texas Low-Level Radioactive Waste Disposal Compact Commission (TLLRWDCC).*

## Session 18

3:15 PM - 5:00 PM Room 102A

### Selected Key Topics in US Commercial LLW Management

Co-Chairs: **Ted Buckner**, *Southeast Compact Commission*; **Colleen Owens**, *DeNuke Contracting Services, Inc.*  
Lead Organizer & Paper Reviewer: **Ted Buckner**, *Southeast Compact Commission*  
Add'l Organizer: **Colleen Owens**, *DeNuke Contracting Services, Inc.*

**The Richard S. Hodes M.D Honor Award will be presented during this session to the Electric Power Research Institute (EPRI).**

**The awards ceremony is followed by the WM2014 Richard S. Hodes Honor Lecture presented by EPRI.**

After the Hodes Award and the presentation by **Lisa Edwards**, EPRI, two additional key selected papers will follow on US LLW management.

1. **How Low Can You Go?** - 14669  
*Lisa Edwards, EPRI*
2. **How Long is Too Long?** - 14644  
*David Esh, Christopher McKenney, Christopher Grossman, US NRC*
3. **Los Alamos National Laboratory's 3,706 TRU Waste Campaign - TRU Reclassified Material Disposition Program and Disposal Options at WCS Resulting in Significant Cost and Schedule Savings** - 14650  
*Kelly Hunter, Matthew LaBarge, Trent Riggs, Waste Control Specialists LLC; Michael J. Romero, Los Alamos National Laboratory; Carolyn Bateman, Project Time & Cost; Lee Bishop, US DOE*

## Session 19

1:30 PM - 3:10 PM Room 102A

### D&D of Nuclear Facilities (Non-Power Generating Facilities) Part 2 of 2

Co-Chairs: **Michelle Claggett**, *Project Enhancement Corporation*; **Fred Sheil**, *Sheil Consulting, Ltd.* (United Kingdom)

Lead Organizer & Paper Reviewer: **Fred Sheil**, *Sheil Consulting, Ltd.* (United Kingdom)

**1:35 Operational Experience and Challenges Associated with Bulk Waste Retrievals from a Legacy Decommissioning Site** - 14095  
**Graham Buck**, *Atkins Limited (United Kingdom)*

**2:00 Removal of Radioactive Waste Tank and Drain Lines from the Whiteshell Laboratories Research and Development Laboratory Complex** - 14341  
**Kevin Larsen**, *Len Rasmussen, Bill Cunliffe, Atomic Energy of Canada Limited (Canada)*

**2:25 The Decommissioning and Abandonment from Regulatory Control of Dalhousie University's SLOWPOKE-2 Nuclear Research Reactor** - 14170  
**Robert Barker**, *Canadian Nuclear Safety Commission (Canada)*

**2:50 The Design and Construction of a Modular, Transportable, Liquid Effluent Treatment Plant for Use in a NPP Undergoing Decommissioning** - 14562  
**Ian Crabbe**, *Robert Keep, James Fisher Nuclear Ltd (United Kingdom)*

## Session 20

3:15 PM - 5:00 PM Room 103AB

### D&D of Nuclear Power Plants - Global Emerging Issues and Strategies

Co-Chairs: **Al Freitag**, *Mitsubishi Nuclear Energy Systems*; **Fred Sheil**, *Sheil Consulting, Ltd.* (United Kingdom)

Lead Organizer: **Fred Sheil**, *Sheil Consulting, Ltd.*  
Panel Reporter: **Michelle Claggett**, *Project Enhancement Corporation*

This panel will focus on the worldwide D&D issues at Nuclear Power Plants. With the recent drop in gas prices in the US and reaction to the events of Fukushima the nuclear renaissance in Europe and

North America has slowed or been reversed and a number of plants are being shut down earlier than initially planned. This panel will discuss national and international emergent issues and their impact on decommissioning strategies, planning and implementation.

**Panelists include:** **Jerry Keto**, *Ontario Power Generation (Canada)*; **Bruno Thomauske**, *University of Aachen (Germany)*; **Ed Avella**, *Director, Southern California Edison, San Onofre Nuclear Generating Station* and a representative from a Swedish Utility.

## Session 21

1:30 PM - 5:00 PM Room 106C

### Emerging Treatment Technologies for LLW, ILW, and Mixed Waste

Co-Chairs: **Heinz Kroeger**, *TÜV NORD EnSys Hannover (Germany)*; **Paul Macbeth**, *US DOE*  
Lead Organizer & Paper Reviewer: **Paul Macbeth**, *US DOE*

Add'l Organizer: **Walter Josephson**, *WorleyParsons Polestar*

**1:35 Effect of Sulfate on Rhenium Partitioning during Melting of Low-Activity Waste Glass Feeds** - 14116  
**Tongan Jin**, *Dong-Sang Kim, Michael Schweiger, Pacific Northwest National Laboratory*

**2:00 From Non-Disposable to Disposable, Treatment of Pyrophoric or Gas Forming Waste Forms for Disposal** - 14155  
**Carl Österberg**, *Maria Lindberg, Studsvik Nuclear AB (Sweden)*

**2:25 The Innovative Plasma Tilting Furnace for Industrial Treatment of Radioactive Waste** - 14420  
**Jan Deckers**, *Belgoprocess (Belgium)*

**2:50 Contained Waste Processing System for UK Nuclear Facility** - 14025  
**Adam Harper**, *Hosokawa Micron Ltd (United Kingdom)*

**3:20 Innovative Treatment of Problematic (Orphan) and Other Organic Wastes: An Excellent Example of International Technology Transfer between the US and the UK** - 14119  
**Michael Conti-Ramsden**, *Mike Lodge, Nigel Brown, Arvia Technology (United Kingdom)*; **Laurie Judd**, *John Ritter, NuVision Engineering, Inc.*; **Tom Yarbrough**, *Perma-Fix Environmental Services, Inc.*; **Richard Grondin**, *Perma-Fix Environmental Services, Inc.*; **Christine Gelles**, **Douglas Tonkay**, **Ana Han**, **Rosa Elmetti**, *US DOE*

**3:45 Evaluation of the Immobilization of Technetium by Incorporation into an Electroless Plated Ternary Alloy** - 14179  
**Eric Tchemitcheff**, Kevin Hagerty, AREVA Federal Services

**4:10 Assessment of the Cast Stone Low-Temperature Waste Form Technology Coupled with Technetium Removal** - 14379  
**Christopher Brown**, Brian Rapko, Jeffrey Serne, Joseph Westsik, Pacific Northwest National Laboratory; Alex Cozzi, Kevin Fox, Daniel McCabe, Charles Nash, William Wilmarth, Savannah River National Laboratory

## Session 22

1:30 PM - 5:00 PM

Room 105C

### Worldwide Perspectives of Radioactive Waste Management - Challenges and Solutions

Co-Chairs: **Maria Lindberg**, Studsvik Nuclear AB (Sweden); **Irena Mele**, IAEA (Austria)  
Lead Organizer & Paper Reviewer: **John Mathieson**, UK NDA (United Kingdom)  
Add'l Organizers: **Leif Eriksson**, Nuclear Waste Dispositions; **Gérald Ouzounian**, Andra (France)

**1:35 The US DOE Office of Environmental Management International Program** - 14606  
**Rosa Elmetti**, Ana Han, Jack Craig, US DOE; Jay Roach, Nexergy Technical

**2:00 The Regulatory Framework for a United Arab Emirates Spent Fuel and Radioactive Waste Management Strategy** - 14090  
**Sana Bilal**, FANR (United Arab Emirates)

**2:25 Selecting Nuclear-Powered Submarines in Australia: Nuclear Waste Considerations** - 14436  
**James Voss**, Predicus, LLC; Helen Cook, Roland Backhaus, Pillsbury Winthrop Shaw Pittman LLP; Anthony Irwin, SMR Nuclear Technology (Australia); Stefaan Simons, James Brown, Anthony Owen, Timothy Stone, University College London (Australia)

**2:50 Economic Issues of Radwaste Management Law Implementation in Russian Federation** - 14020  
**Denis Fedorov**, SIA Radon; Dmitry Adamovich, FSUE RADON (Russian Federation)

**3:20 How Does the Waste Isolation Pilot Plant (WIPP) Benefit from International Cooperation?** - 14088  
**Abraham Van Luik**, US DOE-EM; Tom Klein, URS-PS; Roger Nelson, Russell Patterson, US DOE

**3:45 French Radioactive Waste Management: a Sustainable Approach** - 14507  
**Jean-Michel Grygiel**, **Jean-Michel Romary**, AREVA; Henri Zaccari, AREVA NC; Gérald Ouzounian, Andra; Géraldine Benoit, EDF (France)

**4:10 Pathway to Arizona's Nuclear Future** - 14235  
**John Van De Beuken**, **Al Melvin**, Arizona State Senator

**4:35 Spent Nuclear Fuel Management in Russia, Some Peculiarities and Prospects** - 14259  
**Kirill Lavrentiev**, State Nuclear Corporation ROSATOM (Russian Federation)

## Session 23

1:30 PM - 5:00 PM

Room 106A

### Perspectives on US Repository Programs - After the US Blue Ribbon Commission

Co-Chairs: **Sal Golub**, US DOE; **Bruce Robinson**, Los Alamos National Laboratory  
Lead Organizer & Paper Reviewer: **Harry Babad**, Author & Consultant  
Add'l Organizer: **John Tseng**, Savannah River Remediation, LLC  
Panel Reporter: **Roger Nelson**, US DOE

At the end of this paper session, an audience discussion will commence on Spent (and Used) Nuclear Fuel (SNF/UNF) disposal. The discussion will include the technical, institutional, as well as broader political issues associated with expansion of nuclear power by solving the SNF/UNF waste disposal issue. This is the merging of Session 101 panel with this session. Moderating the session with the audience will be Robert Edmonds, AREVA.

**1:35 Introspective Examination of the Issues Associated with the Nuclear Waste Disposal Confidence Situation** - 14462  
**Donald Vieth**, Retired/US DOE/NVOO Project Manager for Yucca Mountain; Michael Voegele, Consultant

**2:00 Restart of the Yucca Mountain License Application Review Directed by the US Court of Appeals for the District of Columbia** - 14645  
**Michael Voegele**, Consultant; Joseph Ziegler, Nye County, Nevada; Darrell Lacy, Nye Cty Nuclear Waste Repository Project

**2:25 Resuming Yucca Mountain Licensing in a Post-Blue Ribbon Commission World** - 14560  
**Rod McCullum**, NEI; Paul Seidler, Retired

**2:50 Yucca Mountain and New Mexico, Two Promising States to Avoid Imposing Undue Nuclear Waste Management and Disposal Burdens on Current and Future Generations** - 14043

**George Dials**, *B&W Conversion Services, LLC*;  
**Leif Eriksson**, *Nuclear Waste Dispositions*

**3:20 EPA's Confirmatory PA Analysis of DOE's Proposed Run-Of-Mine Salt Panel Closure System for the WIPP** - 14058  
**Kathleen Economy**, *US EPA*

## Session 24

**1:30 PM - 3:10 PM Room 102BC**

### Panel: Risk Regulations for Radioactive Waste Management

Co-Chairs: **Christine Gelles** and **Bill Levitan**, *US DOE*

Lead Organizer: **W.T. (Sonny) Goldston**, *EnergySolutions*

Add'l Organizers: **Christine Gelles**, *US DOE*;  
**Jeannette Hyatt**, *Savannah River National Laboratory*;

**Linda Suttora**, *US DOE*

Panel Reporter: **Roger Seitz**, *SRNL*

This panel will discuss the risk-informed provisions for waste management of US DOE and UK radioactive wastes. The US DOE proposed regulation (DOE Order 435.1A) will be released soon for public comment and panelists will discuss the provisions of this Order that have been revised in the proposal to improve risk informed nature of the requirements. There will be representation from the three major waste types used in classifying US DOE waste (LLW, TRU and HLW) and the General Requirements Sections. The UK representative will discuss implementation of the Low-Level Waste Disposal Requirements issued by the Office of Nuclear Regulation.

**Panelists include:** **Linda Suttora**, *Senior Technical Staff, Office of Environmental Compliance Management, US DOE-EM*; **Joel Case**, *Federal Project Director, Sodium Bearing Waste Treatment Project, Idaho Cleanup Project, US DOE-ID*; **J.R. Strobel**, *Director of the Office of the National TRU Program (NTP), US DOE Carlsbad Field Office*; **Frank DiSanza**, *Navarro Research & Engineering, Inc. and former Federal Project Director, Waste Management at Nevada National Security Site* and **Ryan Maitland**, *Principal Inspector of Nuclear Safety, UK Office for Nuclear Regulation (United Kingdom)*.

## Session 25

**3:15 PM - 5:00 PM Room 102BC**

### Panel: US DOE Office of Legacy Management – A Vision

Co-Chairs: **Jane Powell** and **David Shafer**, *US DOE*  
Lead Organizer & Panel Reporter: **Jane Powell**, *US DOE*

Add'l Organizers: **Helen Belencan**, *Environmental Management Consultant*; **David Shafer**, *US DOE*

This panel focuses on the US DOE Office of Legacy Management (LM) program and its current efforts to manage 91 sites, nuclear weapons complex retirees' medical benefits and pensions, and worker and site records. December 2013 marked the 10 year anniversary of the establishment of the Office of Legacy Management.

Discussions will include LM's future mission challenges and opportunities, including: increasing scope in a time of budget uncertainties, working with ongoing mission sites, and records management for sites such as Yucca Mountain. The panel will also include a discussion of emerging issues, such as: the Abandoned Uranium Mines Report to Congress, controlling costs as remedy infrastructure ages, and expanded international cooperation.

An oral paper session including more details on programmatic LM efforts will be in Session 42. WM attendees interested in the history and future of post remediation, legacy management should plan to attend.

**Panelists include:** **Dave Geiser**, *Director*; **Thomas Pauling**, *Office Director, Site Operations*; **Barbara McNeal Lloyd**, *Office Director, Business Operations*; **April Gil**, *Team Lead, Environment Team 1*; **Karen Reed**, *Team Lead, Environment Team 2*; **David Shafer**, *Team Lead, Asset Management Team*; **Ray Plienness**, *Senior Advisor, Site Operations* and **John Montgomery**, *Team Lead Archives & Information Management Team, US DOE-LM*.

## Session 26

1:30 PM - 5:00 PM

Room 106B

### Engaging Citizens - Lessons Learned From Around the World

Co-Chairs: **Jessica Calhoun**, *Savannah River Remediation*; **Heather Klebba**, *NFT*  
Lead Organizer: **Heather Klebba**, *NFT*  
Add'l Organizers: **Helen Belencan**, *Environmental Management Consultant*; **Judith Connell**, *Fluor*;  
**Cedric Garnier**, *CEA Marcoule* (France)  
Paper Reviewer: **John Dalton**, *NDA* (United Kingdom)

**1:35 Public Involvement and Participation in Site Selection for Spent Nuclear Waste in Sweden** - 14460

**Marie Berggren**, *Rolf Persson, The Municipality of Oskarshamn* (Sweden)

**2:00 Improving Credibility and Competence in Geological Disposal through International Co-Operation and Initiatives** - 14499

**Ann McCall**, **Magnus Holmqvist**, *SKB International AB* (Sweden); **Bruce McKirdy**, **Glenda Crockett**, *NDA* (United Kingdom)

**2:25 Ethical Principles for the Management of High-Level Spent Nuclear Fuel (SNF)** - 14152

**Carl Brakenhielm**, *Swedish National Council for Nuclear Waste/Uppsala University* (Sweden)

**2:50 A New Mindset in Terms of How the Nuclear Industry Engages the General Public** - 14357

**Laurel Boucher**, *The Laurel Co.*

**3:20 "CIGEO" Geological Disposal for HLW and ILW: A Technical Dialogue Between the Public Expert and Civil Society** - 14106

**Ludivine Gilli**, *François Marsal, IRSN* (France)

**3:45 Site Selection for Canada's National Repository for Used Nuclear Fuel** - 14602

**Jo-Ann Facella**, *Nuclear Waste Management Organization* (Canada)

**4:10 Update on the Radioactive Waste Position in the UK** - 14105

**John Dalton**, *NDA* (United Kingdom)

**4:35 Mini Encyclopedia of Nuclear Energy – an Important Tool for Public Information** - 14124

**Igor Jencic**, **Radko Istenic**, **Jozef Stefan Institute** (Slovenia)

## Session 27

1:30 PM - 5:00 PM

Room 101B

### Worldwide Management of Spent and Disused Radioactive Sealed Sources, HEU, and Orphan Radioactive Materials and Control

Co-Chairs: **Alexander Brandl**, *Colorado State University*; **Guenter Hillebrand**, *Nuclear Engineering Seibersdorf GmbH* (Austria)  
Lead Organizer & Paper Reviewer: **Kim Auclair**, *KD Auclair & Associates, LLC*

**1. The UK's Plutonium Stockpile - Early Regulatory Assessment of Credible Options** - 14240

**Ryan Maitland**, *Kulvinder McDonald, Office for Nuclear Regulation* (United Kingdom)

**2. Looking Toward Sustainable Long-term Management of Disused Sealed Radioactive Sources** - 14280

**Julia Whitworth**, **Juan Carlos Benitez-Navarro**, **Vilmos Friedrich**, **Kate Roughan**, *IAEA* (Austria)

**3. Experiences in the Field of Radioactive Materials Seizures in the Czech Republic** - 14147

**Karel Svoboda**, **David Šír**, **Josef Mudra**, **Josef Podlaha**, **UJV Rez**, *a.s.* (Czech Republic)

**4. Sealed Source Disposal 2014 and Beyond: Successes, Challenges, and Areas for Further Research and Assessment** - 14302

**Abigail Cuthbertson**, *US DOE*; **David Martin**, *Energetics Incorporated*

**5. Challenges in Disposal of Off-Site Source Recovery Project Sources at the Waste Isolation Pilot Plant** - 14530

**Ioana Witkowski**, **Justin M. Griffin**, **Cristy Abeyta**, **John Zarling**, *Los Alamos National Laboratory*

**6. Belgian Global Approach on the Radiological Surveillance of Radioactive Orphan Sources and Radioactive Substances in Metal Scrap and Non-Radioactive Waste** - 14126

**Daan Van der Meersch**, **Katleen De Wilde**, *Federal Agency for Nuclear*; **Wouter Schroeders**, *National Agency for Radioactive Waste and Enriched Fissile Materials* (Belgium)

**7. Size Matters, Management of Radioactive Waste in the Netherlands** - 14586

**Ewoud Verhoef**, **Hans Codee**, *COVRA N.V.* (The Netherlands)

**8. Evolution of an Orphaned Source Management Strategy - Canadian Experience** - 14666

**Henry Rabski**, **Jennifer Pyne**, *Canadian Nuclear Safety Commission* (Canada)

**9. Safety and Security of Radioactive Sources in Industrial Radiography in Bangladesh** - 14459

**Abdus Sattar Mollah**, *Industrial Inspection Services* (Bangladesh)

## Session 28

1:30 PM - 3:10 PM Room 101C

### Perspectives on the US DOE Hanford HLW Leaking Tank - AY-102

Co-Chairs: **Larry Ling**, *Savannah River Remediation, LLC*; **Bruce Wiersma**, *SRNL*

Lead Organizer: **William Wilmarth**, *SRNL*

Add'l Organizers: **Vijay Jain**, *Larry Ling, SRR, LLC*

Paper Reviewer: **Harry Babad**, *Author & Consultant*

**1:35 Discovery of the First Leaking Double-Shell Tank – Hanford Tank 241-AY-102** - 14222  
*Stephanie Harrington, Terry Sams, Washington River Protection Solutions*

**2:00 Double-Shell Tank Visual Inspection Changes Resulting from the Tank 241-AY-102 Primary Tank Leak** - 14193  
*Crystal Girardot, Dennis Washenfelder, Washington River Protection Solutions, LLC; Jeremy Johnson, US DOE; Jason Engeman*

**2:25 Tank 241-AY-102 Liner Corrosion Evaluation** - 14191  
*Kayle Boomer, Dennis Washenfelder, Washington River Protection Solutions; Jeremy Johnson, US DOE*

**2:50 Washington State Department of Ecology's Evaluations of the 241-AY-102 Hanford's First Leaking Double Shell Tank** - 14342  
*Michelle Hendrickson, Washington State Department of Ecology*

## Session 29A

3:15 PM - 5:00 PM Room 101C

### TRU Hot Cell Operations and Lessons Learned

Co-Chairs: **Betty Humphrey**, *Weston Solutions, Inc.*; **J.R. Stroble**, *US DOE*

Lead Organizer: **Roger Nelson**, *US DOE*

Add'l Organizers: **Don Booher**, *DBX Energy Consultants*; **Kapil Goyal**, *Los Alamos National Laboratory*

Paper Reviewer: **Betty Humphrey**, *Weston Solutions*

**3:20 Overcoming Challenges to Dispose of a Shielded Container in the Waste Isolation Pilot Plant (WIPP)** - 14348  
*Steve Kouba, URS Professional Solutions LLC; Daniel Pancake, ANTECH / ANL; Cynthia Rock, ANL; Ed Gulbransen, Nuclear Waste Partnership LLC; Russell Patterson, James Rhoades, US DOE*

**3:45 Novel Design Models of Container Configurations to Increase Efficiency of Disposal of Remote-Handled Transuranic Waste at the Waste Isolation Pilot Plant** – 14426  
*Bridget Ams, LANL; Roger Nelson, Kerry Watson, US DOE*

**4:10 Sodium Separation from Remote-Handled Transuranic Waste via Distillation** - 14479  
*David Morgan, Chad W. Ross, Rodney Campbell, CH2M-WG Idaho, LLC*

## Session 29B

1:30 PM - 5:00 PM Room 301A

### Panel: US DOE Acquisition & Project Management - Contractor vs. Federal Baseline/Build What Was Sold

Co-Chairs: **Stuart MacVean**, *Savannah River Remediation, LLC*; **Kenneth Picha**, *US DOE*

Lead Organizer & Panel Reporter: **Larry Ling**, *Savannah River Remediation, LLC*

Add'l Organizers: **Kenneth Rueter**, *Savannah River Remediation LLC*; **Jack Surash**, *US DOE*

This two part panel focuses on various aspects of the US DOE acquisition and project management process to facilitate improved understanding and implementation of US DOE requirements.

The first part will address the Contractor Baseline and the Federal Baseline and related alignment issues. The discussion will include **Jack Surash** (Global Issues); **Ken Rueter** (Contractor Perspective); **Christopher Honkomp** (Pre-Award Stage); **Reggie James** (Post-Award Stage) and **Heather Cloar & Pat Timbes** (Contract Alignment).

The second part of the panel session will focus with **Jack Surash** on "Build What You Sold" (The US DOE Perspective) and **Ken Rueter** (Contractor Perspective). WM attendees involved with US DOE project and contract management should attend this panel session and add to the discussion.

**Panelists include:** **Jack Surash**, *DAS for Acquisition & Project Management, EM-50 US DOE*; **Kenneth Rueter**, *President and Project Manager, SRR*; **Susan Stiger**, *Chair, Energy Facility Contractors Group (EFCOG)*; **John Longenecker**, *President, Longenecker & Associates*; **Reggie James**, *Director, Contract Assistance, EM-52 US DOE*; **Christopher Honkomp**, *Director, Procurement Planning, EM-51 US DOE*; **Pat Timbes**, *Deputy Manager Project Planning, Integration and Controls, UCOR* and **Heather Cloar**, *Contracting Officer, Oak Ridge Office US DOE.*



## Poster Session 30A

1:30 PM - 5:00 PM 1st Floor Foyer

### Topic A: HLW Posters: Processing, Regulatory, and Safety Aspects of HLW Streams

Co-Chairs: **Jonathan Bricker**, *Savannah River Remediation, LLC*; **Terry Sams**, *Washington River Protection Solutions*

Lead Organizer & Paper Reviewer: **Jonathan Bricker**, *Savannah River Remediation, LLC*

- A1. Removal of Salt-Soluble Fission Products from the Metal Product of the Electrolytic Reduction Process** - 14063  
*Iksoo Kim*, *Seung-Kook Park*, *Yun Dong Choi*, *Wn Hyoung Cho*, *Jei-Kwon Moon*, *Korea Atomic Energy Research Institute (Republic of Korea)*
- A2. Estimating Residual Solids Volumes in Underground Storage Tanks** - 14198  
*Jason Clark*, *S. Jason Worthy*, *Bruce Martin*, *John Tihey*, *Savannah River Remediation, LLC*
- A3. Experimental Testing of Innovative High-Level-Waste Pipeline Unplugging Technologies** - 14601  
*Leonel Lagos*, *Amer Awwad*, *Tomas Pribanic*, *J Crespo*, *Seckin Gokaltun*, *Florida International University (FIU)*
- A4. Computational Fluid Dynamics Modeling of High Level Waste Plug Formation** - 14359  
*Dwayne McDaniel*, *Romani Patel*, *Georgio Tachiev*, *Dania Castillo*, *FIU*
- A5. Risk and Performance Analyses Supporting Closure of Waste Management Area C at the Hanford Site in Southeast Washington** - 14226  
*Marcel Bergeron*, *Susan Eberlein*, *Washington River Protection Solutions*; *Michael Connelly*, *Freestone Environmental Services, Inc*; *Matthew Kozak*, *Alaa Aly*, *INTERA*; *Sunil Mehta*, *INTERA Inc.*; *Chris Kemp*, *R. Douglas Hildebrand*, *US DOE*
- A6. Release Behavior of Radioactive Materials at a Boiling Accident of High Active Liquid Waste in Reprocessing Plants** - 14079  
*Gunzo Uchiyama*, *Shinsuke Tashiro*, *Yuuki Amano*, *Hitoshi Abe*, *Yuichi Yamane*, *Kazuo Yoshida*, *Jun Ishikawa*, *Japan Atomic Energy Agency (Japan)*
- A7. Black Cell Operations - UK National Nuclear Laboratory Experience** - 14049  
*Steven Thomson*, *NNL (United Kingdom)*
- A8. Using a Full Scale Support Rig to Enhance the Performance of the Waste Vitrification Plant at Sellafield** - 14590  
*Julian Roe*, *Steven Thomson*, *Myrian Wood*, *NNL (United Kingdom)*

### Topic B: HLW Posters: Characterization and Modeling of HLW

Co-Chairs: **Aruna Arakali**, *URS Corporation*; **Sharon Marra**, *Savannah River National Laboratory*

Lead Organizer: **Sharon Marra**, *SRNL*

Paper Reviewer: **Azadeh (Azi) Samadi**, *SRR, LLC*

- B1. Experimental Comparison between High Purity Germanium and Scintillator Detectors for Determining Burnup, Cooling Time and Decay Heat of Used Nuclear Fuel** - 14488  
*Peter Jansson*, *Sophie Grape*, *Uppsala University (Sweden)*; *Stephen J. Tobin*, *Los Alamos National Laboratory*; *Henrik Liljenfeldt*, *Swedish Nuclear Fuel and Waste Management Company (Sweden)*
- B2. Solubility Validation from Boildown Data for Hanford Tank Liquids** - 14445  
*Stephen Agnew*, *Robert Wilson*, *Columbia Energy & Environmental*; *Gene Ramsey*, *Washington River Protection Solutions*
- B3. Binary Pitzer Model Parameters for Predicting the Solubility of Key Electrolytes in Hanford Waste** - 14215  
*Jacob Reynolds*, *Robert Carter*, *Kayla Pierson*, *Washington River Protection Solutions*
- B4. Characterization of Uranium Residue from Solid Mo-99 Manufacturing Waste and Development of a Recovery Process using Carbonate Solution** - 14399  
*Lize Stassen*, *Janine Suthiram*, *James Topkin*, *Necsa (South Africa)*
- B5. Transition of Oil and Gas Dynamic Simulation to Nuclear Applications Delivers Big Rewards** - 14466  
*David Cuming*, *DBD Limited (UK)*
- B6. Infrared and Raman Spectroscopy Study of the Structure of Borosilicate Glasses for Solid Radioactive Waste Immobilization** - 14492  
*Sergey Stefanovsky*, *Olga I. Stefanovsky*, *Galina Malinina*, *SIA RADON (Russian Federation)*

### Topic C: HLW Posters: Repository and Storage Aspects of HLW

Co-Chairs: **Jonathan Bricker**, *Savannah River Remediation, LLC*; **Abraham Van Luik**, *US DOE-EM*

Lead Organizer & Paper Reviewer: **Abraham Van Luik**, *US DOE-EM*

- C1. High-level Waste Storage Project Utilizes Modified SNF Dry Storage Design** - 14521  
*Cynthia Dayton*, *Heatherly Dukes*, *Lettie Chilson*, *Daniel Meess*, *Joseph Ebert*, *David Kurasch*, *CH2M HILL Babcock Wilcox LLC*; *Mark Bellis*, *US DOE*

- C2. Stability of Silica Colloids Released from Injection Grout Silica Sol** - 14130  
*Pirkko Hölttä, Jukka Lehto, Risto Harjula, University of Helsinki (Finland)*
- C3. Interaction of Radionuclides and Colloids Released from Materials Related to the Disposal of SNF** - 14273  
*Pirkko Hölttä, Suvi Niemiaho, Outi Elo, Risto Harjula, Jukka Lehto, University of Helsinki (Finland)*
- C4. Integrity Study of Spent PWR Fuel Under the Dry Storage Condition** - 14236  
*Jong Won CHOI, Young-Chul Choi, Dong-Hak Kook, Korea Atomic Energy Research Institute (Republic of Korea)*

### Poster Session 31

**1:30 PM - 5:00 PM**                      **Exhibit Hall**

### Student Posters: The Next Generation - Industry Leaders of Tomorrow

Co-Chairs: **Robert Berry**, *Foxfire Scientific, Inc.* (United Kingdom); **Leonel Lagos**, *Florida International University*

Lead Organizer: **Leonel Lagos**, *FIU*

Paper Reviewer: **Robert Berry**, *Foxfire Scientific, Inc.*

The Student Posters will be displayed all week in the Exhibit Hall; judging is 1:30 PM - 5:00 PM on Monday.

- S1. The Virtue of Flux Measurements during Hydraulic Tomographic Surveys in Highly Layered Aquifer Systems** - 14670  
*Chak Hau Michael Tso, University of Arizona*
- S2. Detecting Fracture Connectivity in a Nuclear Waste Deposit Site using Hydraulic Tomography** - 14672  
*Yuanyuan Zha, University of Arizona*
- S3. Ultrasonic Transducers for Structural Health Monitoring of Nuclear Waste Containment Units** - 14673  
*Andrew Suprock, Bernhard Tittmann, Pennsylvania State University*
- S4. Molten Salt Oxidation of Organic Radioactive Waste** - 14128  
*Andrew Akin, New Mexico Tech; Petr Kovarik, Research Centre Rez Ltd. (Czech Republic)*
- S5. Design Options for Delaying Long Term Iodine Emissions from a Canadian High Level Radioactive Waste Repository.**
- Authors:** Daryn Cressy, Mitchell Hines, Gerrit Huesing, Dr. Brian Ikeda, *University of Ontario Institute of Technology (Canada)*
- S6. Microcosm Study on Mineralogical changes of post Molasses Injection with Savannah River Site (SRS) F-area Sediments.**  
Valentina Padilla (DOE Fellow), Yelena Katsenovich, *Applied Research Center, Florida International University (FIU)*
- S7. Innovative High-Level Waste Pipeline Unplugging Technologies for Hanford Site (Asynchronous Pulsing)** - Alexandra Fleitas (DOE Fellow), *Applied Research Center, FIU*
- S8. Rapid Imaging of Settled Solids in Hanford HLW Staging Tanks** - Dayron Chigin (DOE Fellow), *Applied Research Center, FIU*
- S9. Computational Simulation and Evolution of High-Level Waste Pipeline Plugs** - Deanna M. Moya (DOE Fellow), *Applied Research Center, FIU*
- S10. US Low Level and Mixed Low Level Waste Treatment Technology Identification** - Gabriela Vazquez (DOE Fellow), *Applied Research Center, FIU*
- S11. Analysis of Life Expectancy for Waste Transfer Lines Located at Hanford Site** - Jennifer Arniella (DOE Fellow), *Applied Research Center, FIU*
- S12. Investigation of Permanent and Removable Coatings for Decontamination of Savannah River Site (SRS) Plutonium Fuel Form Facility** - Mariana Evora (DOE Fellow), *Applied Research Center, FIU*
- S13. Computational Fluid Dynamics Simulations of Fluid Transients in a Pipeline at Hanford Site** - Michael Abbott (DOE Fellow), *Applied Research Center, FIU*
- S14. Display of Contaminated Locations at Oak Ridge site using ArcGIS** - Michelle Embon (DOE Fellow), *Applied Research Center, FIU*
- S15. A Study of Cell Viability on DOE Hanford Soil Isolates: Effect of U (VI) and Bicarbonate** - Paola Sepulveda-Medina (DOE Fellow), *Applied Research Center, FIU*
- S16. Native Android Application for Deactivation & Decommissioning Technologies** - Pedro Cordon (DOE Fellow), *Applied Research Center, FIU*

- S17. Performance Evaluation of Mobile Applications with Deactivation & Decommissioning (D&D) Technology Services** - Chandrashekar Gama Deshika Swamy (Graduate Student), *Applied Research Center, FIU*
- S18. Characterization of the Uranium-Bearing Products of Novel Remediation Technologies** - Robert Lapierre (DOE Fellow), *Applied Research Center, FIU*
- S19. Design and Development of Geographical Information System (GIS) Map for DOE Waste Streams** - Sandhya Appunni (Graduate Student), *Applied Research Center, FIU*
- S20. GPU Accelerated Lattice-Boltzmann Method for Fluid Flows in Nuclear Waste Tanks at Hanford Site** - Sasha Philius (DOE Fellow), *Applied Research Center, FIU*
- S21. Development of REST Services for Populating ESRI's ArcGIS Spatial Modeling Applications** - Steve Noel (DOE Fellow), *Applied Research Center, FIU*
- S22. U(VI) Bioreduction via Molasses-based Reagent Injection** - Valentina Padilla (DOE Fellow), *Applied Research Center, FIU*
- S23. Engineering Scale Pipeline Unplugging Testing Using the Improved Peristaltic Crawler System for Removal of High Level Waste Plugs at Hanford Site Pipelines** - Carmela Vallalta (DOE Fellow), *Applied Research Center, FIU*
- S24. The Effects of Silica and Humic Acid on U(VI) Removal from Savannah River Site (SRS) F/H Area Groundwater** - Joel McGill (DOE Fellow), *Applied Research Center, FIU*
- S25. Environmental Remediation Optimization: Cost Savings, Footprint Reduction, and Sustainability Benchmarked on DOE Sites** - Natalia Duque (DOE Fellow), *Applied Research Center, FIU*

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**March 4, Tuesday AM**

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**Session 32**

**8:30 AM - 12:00 PM      Room 102BC**

**Panel: US DOE Featured Site: Hanford - Accomplishments and Challenges of WM, D&D and ER Part 1 of 2**

Co-Chairs: **Briant Charboneau, John Morse, US DOE**  
 Lead Organizer: **Dawn Wellman, Pacific Northwest National Laboratory**  
 Add'l Organizers: **Briant Charboneau and John Morse, US DOE**  
 Panel Reporter: **Cameron Hardy, US DOE**

This panel focuses on the US DOE Hanford Site located in Richland, WA. It will showcase recent progress, challenges, and planned efforts in radioactive waste management, waste disposition, environmental remediation, D&D and water stewardship.

**Panelists include: Matthew S. McCormick, Manager, US DOE Richland Operations Office; Scott Sax, President of Washington Closure Hanford, LLC; John C. Fulton, President and CEO, CH2M HILL Plateau Remediation Company and Frank Armijo, President, Mission Support Alliance.**

**Session 34**

**8:30 AM - 12:00 PM      Room 105AB**

**Panel: Emerging Issues That Challenge Traditional Contractor Roles - Worldwide**

Co-Chairs: **John Longenecker, Longenecker & Associates, Inc.; Bill Shingler, Fluor Gov. Group**  
 Lead Organizer & Panel Reporter: **Judith Connell, Fluor**  
 Add'l Organizer: **Bill Shingler, Fluor Gov. Group**

This panel features senior executives from national and international venues who will discuss how restricted budgets, changing leadership, evolving regulations, and emerging technologies are affecting their ability to safely meet mission priorities on schedule and within budget. Panelists will open the session by briefly sharing how they are addressing these issues.

The individual presentations will be followed by an interactive discussion of such timely questions as:

1) How should existing and future contracts and projects be structured to focus on managing the contract rather than the work/contractors? 2) As the market grows internationally, do contractors have the depth of leadership to tackle long-term and/or complex projects? 3) Have we/are we really addressing the issue of workforce aging? 4) How are we transferring knowledge? 5) Are new contracting strategies really attracting the best athlete or the cheapest option? and 6) Are oversight strategies changing, balanced, and achieving improved results or just assuring compliance?

**Panelists include:** **Frederic Bailly**, Vice President, AREVA; **Dennis Carr**, Project Director, Portsmouth D&D Project, Fluor - B&W Portsmouth; **Gilles Clement**, Vice President International Development, AREVA; **Michael Graham**, Principal Vice President and General Manager, US Environmental Business, Bechtel National; **Pam Horning**, Federal Project Director, Salt Waste Project Processing Facility Project, Savannah River Operations; **Joan Miller**, Vice President & General Manager, Decommissioning and Waste Management, Atomic Energy of Canada Ltd.; **Ken Rueter**, President and General Manager, Savannah River Remediation; **Marty Schneider**, Chief Executive Officer, Weapons Complex Monitor; **Farok Sharif**, President and Project Manager, Waste Isolation Pilot Plant, Nuclear Waste Partnership and **Dwayne Wilson**, President and CEO, Savannah River Nuclear Solutions.

### Session 35

**8:30 AM - 12:00 PM Room 104AB**

#### **Panel: International Panel on Safety Culture in WM and D&D**

Co-Chairs: **Ray Clark**, US EPA; **Ryan Maitland**, Office for Nuclear Regulation (United Kingdom)  
Lead Organizer: **Ray Clark**, US EPA  
Add'l Organizer & Panel Reporter: **Ryan Maitland**, Office for Nuclear Regulation

This panel will feature regulatory and industry experts from the international community including the IAEA, the US, the UK and Sweden. The panel will compare international efforts and initiatives towards safe but timely hazard reduction across the nuclear waste management and D&D estate. Contractors and operators have to deliver safe, sustainable and cost-effective waste management and D&D solutions in a climate of increasing financial austerity but increasing regulatory and public expectation of continuous improvement in safety.

Through a series of brief presentations and discussion, panelists will explore Safety Culture and other safety improvement initiatives relevant to these specific challenges, with perspectives from IAEA, Regulators, Governments and Contractors. The objective of the panel is to exchange ideas pertaining to safety culture as well as provide a foundation and venue for future international benchmarking.

**Panelists include:** **Kulvider McDonald**, UK Office for Nuclear Regulation, Radwaste Professional Lead (United Kingdom); **Jim Hutton**, Associate Deputy Assistant Secretary, US DOE; **Simon Carroll**, Analyst at the Department of Radioactive Materials, Swedish Regulatory Authority (Sweden); **Diane Sieracki**, Senior Safety Culture Program Manager, Office for Enforcement, US NRC; **Mark Rouse**, Managing Director, Dounreay Site Restoration Ltd. (United Kingdom); **Peter Elder**, Director General, Canadian Nuclear Safety Commission (Canada) and **Scott Oxenford**, Manager WTP (Organizational Effectiveness), Bechtel National Inc.

### Session 36

**8:30 AM - 12:00 PM Room 105C**

#### **Finland/Sweden Featured Nations - KBS-3 Disposal Method Technology Development**

Co-Chairs: **John Mathieson**, UK NDA (United Kingdom); **Irena Mele**, IAEA (Austria)  
Lead Organizer & Paper Reviewer: **Leif Eriksson**, Nuclear Waste Dispositions

**8:35 Repository Layout, Adaption to the Characteristics of Crystalline Site and Input to the Safety Case, the Finnish Example - 14545**  
*Heini Laine, Nuria Marcos, Timo Saanio, Pirjo Hellä, Annika Hagros, Saanio & Riekkola Oy; Ismo Aaltonen, Posiva Oy (Finland)*

**9:00 Going Underground for Testing and Demonstration: Challenge of Implementation of a Disposal System - 14546**  
*Tiina Jalonen, Ismo Aaltonen, Timo Äikäs, Posiva Oy (Finland)*

**9:25 Nordic Full-Scale Demonstrations of Tunnel Plugging Technologies for Repository Conditions - 14282**  
*Erika Holt, VTT Technical Research Centre of Finland; Johanna Hansen, Petri Koho, Marjatta Palmu, Posiva Oy (Finland); Pär Grahm, SKB - Swedish Nuclear Fuel and Waste Management Co. (Sweden)*

**9:50 Next Target Operating License: Challenges in Building Facilities for Spent Fuel Disposal - 14544**

**Erkki Palonen**, Timo Äikäs, Posiva Oy (Finland)

**10:20 Resolved and Remaining Issues for KBS-3 – SKB's Research, Development and Demonstration Programme 2013 - 14481**

**Olle Olsson**, SKB; Karin Pers, SKB International AB (Sweden)

**10:45 Challenges in Developing the Basic Design of the KBS-3 System into a Qualified and Industrially Viable Operation - 14465**

**Johan Andersson**, Swedish Nuclear Fuel Management Co (Sweden); Tiina Jalonen, Posiva Oy (Finland)

**11:10 The International Peer Review under Aegis of the OECD/NEA, of SKB's Post-Closure Safety Case for a Spent Fuel Repository in Sweden - 14641**

**Claudio Pescatore**, OECD Nuclear Energy Agency (France)

**11:35 Äspö International - Role of the Äspö HRL as an International URL - 14501**

**Ann McCall**, Torsten Eng, SKB International AB (Sweden)

**Session 37**

**8:30 AM**

**Room 106A**

**Processing of Complex Radioactive High Level Salt Waste**

Co-Chairs: **Paul Breidt**, Pacific Northwest National Laboratory; **Robert Jubin**, Oak Ridge National Laboratory

Lead Organizer & Paper Reviewer: **Paul Breidt**, PNNL  
Add'l Organizer: **Robert Jubin**, ORNL

**8:35 A Methodology for Monitoring Concentrations of Complex Waste Solutions - 14182**

**Daniel Griffin**, Ronald W. Rousseau, Martha A. Grover, Yoshiaki Kawajiri, Georgia Institute of Technology

**9:00 Single Stage Contactor Testing of the Next Generation Solvent Blend - 14287**

**David Herman**, Thomas P Peters, Mark Duignan, Michael Williams, Michael Poirier, Savannah River National Laboratory; Earl Brass, Edward Ketusky, Savannah River Remediation, LLC; Annah Garrison, URS-Professional Solutions

**9:25 Implementation of Next Generation Solvent in the Caustic-Side Solvent Extraction Process for Increased Removal of Cesium at Savannah River Site - 14266**

**Earl Brass**, Celia Aponte, Edward Ketusky, Savannah River Remediation, LLC; Annah Garrison, URS-Professional Solutions

**Session 38**

**10:15 AM - 12:00 PM**

**Room 106A**

**Separations for Recycle of Used Nuclear Fuel**

Co-Chairs: **Paul Breidt**, Pacific Northwest National Laboratory; **Robert Jubin**, ORNL

Lead Organizer & Paper Reviewer: **Robert Jubin**, Oak Ridge National Laboratory

Add'l Organizer: **Paul Breidt**, PNNL

**10:20 Tritium Behavior in Zircaloy Cladding from Used Light Water Reactor Fuel Rods - 14087**

**Sharon Robinson**, Robert Jubin, Joseph Giaquinto, Oak Ridge National Laboratory

**10:45 UNEX-T Solvent for Cs, Sr and Actinides Separation from PUREX Raffinate - 14154**

**Igor Smirnov**, Khlopin Radium Institute (Russian Federation)

**11:10 Design and Performance of a Sensitive Multi-Mode Calorimeter for Single Cell Isothermal or Single and Twin Cell Heat-Flow Measurements of Plutonium or Tritium - 14003**

**John Mason**, Kevin Burke, Tom Jennings, Barry Scott, Antony Towner, Graeme Wood, ANTECH

**Session 39**

**8:30 AM**

**Room 106B**

**Tank Waste Storage and Retrieval of HLW**

Co-Chairs: **Christopher Brown**, PNNL; **Vijay Jain**, Savannah River Remediation

Lead Organizer: **William Wilmarth**, Savannah River National Laboratory

Add'l Organizers: **Vijay Jain**, Savannah River Remediation; **Larry Ling**, Savannah River Remediation  
Paper Reviewer: **Harry Babad**, Author & Consultant

**8:35 Evaluation of Hanford Single-Shell Waste Tanks Suspected of Water Intrusion - 14196**

**Amie Feero**, Dennis Washenfelder, John Schofield, Washington River Protection Solutions; Jeremy Johnson, US DOE

- 9:00 Deep Sludge Gas Release Event Analytical Evaluation** - 14225  
*Terry Sams, WRPS*
- 9:25 Overview of Hanford Single-Shell Tank (SST) Structural Integrity** - 14203  
*Rick Rast, Dennis Washenfelder, Washington River Protection Solutions; Jeremy Johnson, US DOE*
- 9:50 Evaluating Feed Delivery Performance in Scaled Double Shell Tanks** - 14070  
*Kearn Lee, AREVA; Mike Thien, Washington River Protection Solutions*
- 10:20 Evaluation of Sludge Heel Dissolution Efficiency with Oxalic Acid Cleaning at Savannah River Site** - 14205  
*Christie Sudduth, Jason Vitali, Mark Keefer, Savannah River Remediation, LLC*
- 10:45 Demonstrating Reliable High Level Waste Slurry Sampling Techniques to Support Hanford Waste Processing** - 14194  
*Steven Kelly, Washington River Protection Solutions*
- 11:10 Development and Deployment of the Extended Reach Sluicing System (ERSS) for Retrieval of Hanford Single Shell Tank Waste** - 14206  
*Roger Bauer, Reed Figley, Washington River Protection Solutions; Alex Innes, AGI Engineering*

### Session 40

**8:30 AM - 12:00 PM Room 101B**

## Performance of Disposal Systems, Facilities and Sites for LLW, ILW, MW, NORM and TENORM

Co-Chairs: **Bob Hiergesell**, *Savannah River National Laboratory*; **Linda Suttora**, *US DOE*  
Lead Organizer & Paper Reviewer: **Bob Hiergesell**, *SRNL*  
Add'l Organizers: **Roger Seitz**, *SRNL*; **Linda Suttora**

- 8:35 US DOE-EM On-Site Disposal Cell Working Group - Fostering Communication on Performance Assessment Challenges** - 14104  
*Linda Suttora, US DOE; Roger Seitz, Mark Phifer, Savannah River National Laboratory*
- 9:00 The Role and Significance of Different Types of Scenarios in the Safety Case for Surface Disposal of Low Level Waste at Dessel, Belgium** - 14092  
*Elise Vermarien, Wim Cool, ONDRAF/NIRAS (Belgium); Roger Wilmot, Galson Sciences Ltd. (United Kingdom)*

- 9:25 Considerations Related to Human Intrusion in the Context of Disposal of Radioactive Waste - The IAEA HIDRA Project** - 14101  
*Roger Seitz, Savannah River National Laboratory; Thomas Beuth, GRS mbH (Germany); Yumiko Kumano, IAEA (Austria); Lucy Bailey, NDA (United Kingdom); Eva Andersson, SKB (Sweden); Chris Markley, US NRC*
- 9:50 Post Closure Safety Assessment of the Proposed Low and Intermediate Level Waste Repository in Slovenia** - 14444  
*Matthew Kozak, INTERA; Sandi Viršek, ARAO (Slovenia); Rodolfo Avila, Facilia AB (Sweden)*
- 10:20 Effects of Age and Differential Settlement on Composite Barrier Components in a Landfill Final Cover** - 14419  
*Craig Benson, University of Wisconsin, Madison; William Albright, Desert Research Institute; Benjamin Smith, EnergySolutions; Joseph Scalia, Exponent Engineering and Scientific Consulting*
- 10:45 Probabilistic Design of Landfill Final Cover System** - 14311  
*Te-Yang Soong, Kevin Foye, Mohammad Kabalan, Ramya Rajan, Morgan Subbarayan, CTI and Associates, Inc.*
- 11:10 Application of the New US EPA Leaching Environmental Assessment Framework (LEAF) to US DOE Environmental Management Challenges** - 14383  
*David Kosson, Andrew Garrabrants, Vanderbilt University; Hans van der Sloot, Hans van der Sloot Consultancy (Netherlands); Kevin Brown, Vanderbilt University/CRESP*

### Session 41

**8:30 AM - 12:00 PM Room 102A**

## D&D of Nuclear Power Plants

Co-Chairs: **Jas Devgun**, *Sargent & Lundy, LLC*; **Bernard Poncet**, *EDF-CIDEN (France)*  
Lead Organizer & Paper Reviewer: **Al Freitag**, *Mitsubishi Nuclear Energy Systems*  
Add'l Organizers: **Jas Devgun**, *Sargent & Lundy, LLC*; **Anja Graf**, *WAK GmbH (Germany)*; **Bernard Poncet**, *EDF-CIDEN (France)*

- 8:35 Containment Preparations for Reactor Internals and Vessel Segmentation for Unit 1 vs. Unit 2 to Support the Early Start of Unit 1 Reactor Internals Segmentation Activities for Zion Station** - 14561  
*Ronald Richards, Robert Woodard, ZionSolutions, LLC*

- 9:00 Feedback from José Cabrera Plant Decommissioning Project** - 14272  
*Per Segerud*, Westinghouse Electric Sweden AB (Sweden); *Joseph Boucau*, Moises Sanchez, Westinghouse Electric Company (Belgium); *Joseph Boucau*, Moises Sanchez, Westinghouse Electric Company (Spain)
- 9:25 Dismantling of the Obrigheim NPP Reactor and Waste Management** - 14500  
*Ralf Borchardt*, Energiewerke Nord GmbH; *Angelika Langowski*, DSR GmbH; *Burkhard Hartmann*, EnBW Kernkraft GmbH (Germany)
- 9:50 The Use of Divers for the Internal Underwater Segmentation of Steam Generators to Support Decommissioning** - 14033  
*Charlie Vallance*, Underwater Engineering Services, Inc.
- 10:20 Changing Economics and Impact of Recent Developments on Nuclear Power and Reactor Decommissioning in the US** - 14423  
*Jas Devgun*, Sargent & Lundy, LLC
- 10:45 Reactor D&D: AREVA French and German Latest Experiences** - 14458  
*Stephan Krueger*, AREVA GmbH (Germany); *Frederic Chambon*, AREVA Federal Services, LLC; *Xavier de Brimont*, AREVA NC (France); *Jean-Luc Fournie*, AREVA NP (France)
- 11:10 A Swedish Regulatory Perspective on Decommissioning Cost Estimation** - 14451  
*Simon Carroll*, Annika Åström, Swedish Radiation Safety Authority (SSM) (Sweden)

## Session 42

**8:30 AM - 12:00 PM Room 101C**

### ER Post Closure Challenges and Long Term Stewardship/Legacy Management

Co-Chairs: **Dale Bignell**, PORTAGE; **Jane Powell**, US DOE

Lead Organizer: **Dale Bignell**, PORTAGE

Add'l Organizers: **Jane Powell**, US DOE

Paper Reviewer: **Joy Shoemake**, Jacobs Engineering

- 8:35 Site Transitions – Moving from Cleanup to Long-Term Stewardship** - 14276  
*Jane Powell*, US DOE; *Melissa Lutz*, S.M. Stoller Corporation
- 9:00 FUSRAP Strategy: A Plan for the Next 10 Years** - 14145  
*Karen Reed*, Christopher Clayton, Cliff Carpenter, Ken Starr, Gwen Hooten, US DOE

- 9:25 Managing Public Concerns about Risk in the Context of Historical Health Impacts** - 14614  
*April Gil*, Cliff Carpenter, US DOE; *Clay Carpenter*, Laura Cummins, S.M. Stoller Corporation
- 9:50 US DOE Office of Legacy Management Abandoned Uranium Mines Report to Congress** - 14132  
*Ray Plienness*, US DOE-LM; *John Elmer*, Michael Butherus, S.M. Stoller Corporation
- 10:20 Evolution of Long-Term Stewardship at Hanford** - 14189  
*Rick Moren*, Mission Support Alliance; *Keith Grindstaff*, US DOE
- 10:45 Geographic Information System Tools For Management of US DOE Sites** - 14125  
*Leonard Turton*, *John Montgomery*, Cliff Carpenter, US DOE; *Stephen Pawel*, S.M. Stoller Corporation
- 11:10 Remote Environmental Monitoring: Applying Automated Sampling to Produce Real-Time Data for Long-Term Monitoring Cost Savings and Compliance Assurance** - 14200  
*Jeff Myers*, Dean Hoffman, Michael Boerste, URS Professional Solutions
- 11:35 The Future is Now: Experience with Remediating and Managing Groundwater Contamination at Uranium Mill Tailing Sites** - 14587  
*David Shafer*, Richard Bush, Bill Dam, Thomas Pauling, US DOE

## Session 43

**8:30 AM - 12:00 PM Room 106C**

### Crosscutting Subsurface Mass Transport and Environmental Assessment of Geological Disposal Systems

Co-Chairs: **Andrew Martin**, NAGRA - National Cooperative for the Disposal of RW (Switzerland); **Ming Zhu**, US DOE

Lead Organizer & Paper Reviewer: **Simon Kwong**, National Nuclear Laboratory (United Kingdom)

Add'l Organizers: **Andrew Martin**, NAGRA; **Tjalle "Chuck" Vandergraaf**, Consultant (Canada); **Ming Zhang**, Geological Survey of Japan, AIST (Japan)

- 8:35 Raman Spectra of Calcium Silicate Hydrates Sorbing Iodine Ions in Saline Groundwater** - 14077  
*Jun Furuya*, Taiji Chida, Yuichi Niibori, Hitoshi Mimura, Tohoku University (Japan)

- 9:00 The Influence of Calcium Ions on Migration of Colloidal Silicic Acid in the Presence of Solid Phase** - 14123  
*Taiji Chida*, Yuichi Niibori, Hitoshi Mimura, Tohoku University (Japan)
- 9:25 Hydrogeologic Simulations of a Deep Seated Groundwater System: Bruce Nuclear Site** - 14484  
*Eric Sykes*, Nuclear Waste Management Organization; Jon Sykes, Stefano Normani, Yong Yin, University of Waterloo (Canada)
- 9:50 In-situ Experiments for Investigating the Retention Properties of Rock Matrix in ONKALO, Olkiluoto, Finland** - 14258  
*Mikko Voutilainen*, Kerttuli Helariutta, Marja Siitari-Kauppi, University of Helsinki (Finland); Antero Lindberg, Geological Survey of Finland (Finland); Kersti Nilsson, Peter Andersson, Johan Byegård, Mats Skålberg, Geosigma AB (Sweden); Petteri Pitkänen, Kimmo Kempainen, Jyrki Liimatainen, Aimo Hautojärvi, Lasse Koskinen, Posiva Oy (Finland); Pekka Kekäläinen, Jussi Timonen, University of Jyväskylä (Finland); Antti Poteri, VTT Technical Research Centre of Finland (Finland)
- 10:20 Permeability and Dispersion Coefficients in Rocks with Fracture Network** - 14156  
*Cheo Kyung Lee*, Handong Global University (Republic of Korea); Myo Zaw Htway, Amberg & TTI Pte. Ltd (Singapore); Sung Paal Yim, Korea Atomic Energy Research Institute (Republic of Korea)
- 10:45 Analysis of Pore Structure Effects on Diffusive Reactive Transport in Bentonite via Pore Network Models** - 14068  
*Qingrong Xiong*, Andrey Jivkov, University of Manchester; Simon Kwong, National Nuclear Laboratory (United Kingdom)
- 11:10 Web-Based Geographic Information System Tool for Accessing Hanford Site Environmental Data** - 14447  
*Mark Triplett*, Timothy E. Seiple, David J. Watson, Pacific Northwest National Laboratory; Briant Charboneau, John Morse, US DOE
- 11:35 Building the Community of Practice for Performance and Risk Assessment in Support of Risk-Informed Environmental Management Decisions** - 14575  
*Ming Zhu*, Linda Suttora, Bill Levitan, US DOE; Mark Gilbertson, US DOE-EM

## Session 44

**8:30 AM - 10:10 AM Room 103AB**

### Panel: Graduating Students and New Engineers- Wants and Needs - Are Companies Even Listening?

Co-Chairs: **Robert Berry**, Foxfire Scientific, Inc. (United Kingdom); **Leonel Lagos**, Florida International University

Lead Organizer: **Robert Berry**, Foxfire Scientific, Inc.  
Add'l Organizer & Panel Reporter: **Leonel Lagos**, FIU

This panel will focus on new hires and graduating engineers having open lines of communication with employers. Considering the projected shortfalls in the workforce, effective communication of wants-and-needs of both the employer and employee must exist. Currently, it seems that both sides must work harder to achieve this level of communication. With this new approach, both sides can express their wants and needs for a more satisfied workforce and a better work environment.

**Panelists include:** **Desi Crouther**, Director, Office of Human Capital, US DOE-EM; **Susan Salter**, Chief, Outreach and Recruitment, US NRC; **Kevin Cooper**, Director, Center for Nuclear Education & Training, Indian River State College and **Gabriela Vazquez**, US DOE Fellow, Florida International University.

## Session 45

**10:15 AM - 12:00 PM Room 103AB**

### Panel: Young Professionals in Nuclear Science and Engineering

Co-Chairs: **Robert Berry**, Foxfire Scientific, Inc. (United Kingdom); **Leonel Lagos**, Florida International University

Lead Organizer: **Robert Berry**, Foxfire Scientific, Inc.  
Add'l Organizer & Panel Reporter: **Leonel Lagos**, FIU

This panel will focus on young professionals and covers views on radioactive waste management from young persons' perspectives from all around the world. An informal roundtable-style format will enable the future leaders of our industry to share ideas and experiences, and of course, develop contacts within their peer group on a truly international level. By selecting the roundtable format, it is hoped that the topic will be interactive, stimulating valuable discussion among the participants and the audience. The panel will be led by young professionals who will actively encourage participation from all those attending. The



aim is to encourage fresh thinking and provide an opportunity for an open and frank discussion on issues.

**Panelists include:** **Christine Csimadia**, *President, North American Young Generation in Nuclear (NAYGN)*; **Monica Mwanje**, *President, United Kingdom Young Generation Network (UKYGN) (United Kingdom)* and **Katherine Huff**, *Postdoctoral Scholar, UC Berkley*.

### Poster Session 46A

**8:30 AM - 12:00 PM**      **1st Floor Foyer**

#### **Topic A: LLW Posters: Sampling and Treatment of LLW, ILW, and Mixed Waste**

Co-Chairs: **David Eaton**, *CH2M-WG Idaho, LLC*; **Christine Langton**, *Savannah River National Laboratory*

Lead Organizer & Paper Reviewer: **Christine Langton**, *SRNL*

- A1. Novel Inorganic Complexes for Tc Management in the Tank Waste** - 14345  
**Tatiana Levitskaia**, *Syandev Chatterjee, James Peterson, Emily Campbell, Pacific Northwest National Laboratory*
- A2. Prospects on Immobilization of Liquid Organic Radwaste with the Use of High Technology Polymers** - 14065  
**Valery Romanovsky**, *Yury Pokhitonov, V.G. Khlopin Radium Institute (Russian Federation)*; *Dennis Kelley, Pacific Nuclear Solutions*
- A3. The Use of a Separator with Granular Media for Removal of the Microemulsion and Solid Fraction at the Enterprises Engaged in Reprocessing of Spent Nuclear Fuel** - 14263  
**Alexander Zherebtsov**, *Innovation and Technology Center of the Project "PRORYV" State Atomic Energy Corporation "Rosatom" (Russian Federation)*
- A4. Common Immobilization of High Concentration Sodium Hydroxide Solutions Product of Sodium Coolant Processing and LRW Saturated NOCHAR Polymers into Geocement Matrix at the BN-350 Nuclear Power Plant in Aktau, Kazakhstan** - 14624  
**Anatoliy Galkin, Alexander Klepikov, Nadezhda Bachilova, Aleksandr Blynskiy**, *Nuclear Technology Safety Center; Turginbek Tolebayev, Al-Farabi Kazakh National University (Kazakhstan)*; *Artem Gelis, Argonne National Laboratory; Anatoliy Ivanov, Igor Yakovlev, MAEC-Kazatomprom LLP; Anatoliy Ivanov, Igor Yakovlev, MAEC-Kazatomprom LLP (Republic of Kazakhstan); Dennis Kelley, Pacific Nuclear*

#### *Solutions*

- A5. Waste Processing Using WCATS and its Task-Based Architecture** - 14662  
**Justin Tozer**, *Keith Russell, J. Christopher Echohawk, Los Alamos National Laboratory*

#### **Topic B: LLW Posters: Management of LLW, ILW, MW, NORM and TENORM**

Co-Chairs: **Kapila Fernando**, *ANSTO (Australia)*; **Colleen Owens**, *DeNuke Contracting Services, Inc.*  
Lead Organizer & Paper Reviewer: **Kapila Fernando**, *ANSTO*

Add'l Organizers: **Christine Langton**, *SRNL*

- B1. Plan for Demonstration Test of Closure Technology for Cavern-Type Disposal Facility** - 14073  
**Atsuo Yamada**, *Yoshihiro Akiyama, Radioactive Waste Management Funding And Research Center; Kiyoshi Amemiya, Hazama Ando Corporation; Yasumasa Suzuki, Tokyo Electric Power Service Co., LTD (Japan)*
- B2. The Expanded Capabilities of the Cementitious Barriers Partnership Software Toolbox Version 2.0** - 14331  
**Greg Flach**, *Frank Smith, Christine Langton, Savannah River National Laboratory; Eric Samson, SIMCO Technologies, Inc. (Canada); Heather Burns, Savannah River Nuclear Solutions, LLC; Pramod Mallick, US DOE; David Kosson, Vanderbilt University; Kevin Brown, Vanderbilt University/CRESP*
- B3. Waste Information Management System with 2013-14 Waste Streams** - 14192  
**Himanshu Upadhyay**, *Leonel Lagos, Walter Quintero, Peggy Shoffner, David Roelant, Florida International University*
- B4. Installation and Performance Test of a LL/ILW Drum Assay System at KAERI** - 14387  
**Won-Hyuk Jang**, *Kyung-Kil Kwak, Dae-Seok Hong, Tae-Kook Kim, Korea Atomic Energy Research Institute; Shi-up Jang, Young In Scientific Co. Ltd (Republic of Korea)*
- B5. Development of Re-Packaged Drum Radioactivity Estimation Method** - 14158  
**Seong Gyu Shin**, *KORAD (Korea Radioactive Waste Agency); Joo Hyun Moon, Dongguk University (Republic of Korea)*
- B6. Management of Ir-192 Disused Sealed Sources with Long-Lived Radioactive Contaminants** - 14572  
**José Claudio Dellamano**, *Robson de Jesus Ferreira, Ademar José Potiens Jr., Roberto Vicente, Goro Hiromoto, Nuclear and Energy Research Institute (Brazil)*

**B7. Microbially Induced Corrosion of Carbon Steel and Stainless Steel in Alkaline Ground Water - Composition and Metabolic Functionality of Biofilm - 14391**

**Pauliina Rajala**, Leena Carpen, Malin Bomberg, Mari Raulio, VTT Technical Research Centre of Finland (Finland); Mikko Vepsäläinen, CSIRO (Australia)

**B8. Hydraulic Conductivity of Geosynthetic Clay Liners Exposed to Low-Level Radioactive Waste Leachate - 14082**

Craig Benson, **Kuo Tian**, University of Wisconsin, Madison

**B9. Computation of the Residual Radionuclide Activity within Three Natural Waterways at the Savannah River Site - 14136**

**Bob Hiergesell**, Mark Phifer, Savannah River National Laboratory

**Poster Session 47**

**8:30 AM - 12:00 PM 1st Floor Foyer**

**Topic: NPP Posters: Management of Nuclear Power Plant (NPP) Waste**

Co-Chairs: **Mark Lewis**, EnergySolutions; **Wolfgang Steinwarz**, Siempelkamp Nukleartechnik GmbH (Germany)

Lead Organizer & Paper Reviewer: **Mark Lewis**, EnergySolutions

Add'l Organizers: **Wolfgang Steinwarz**, Siempelkamp Nukleartechnik GmbH

**1. A New Adsorbent for Simultaneous Removal of Cesium and Strontium - 14110**

**Yuko Kani**, Hitachi, Ltd.; Takashi Asano, Shin Tamata, Hitachi-GE Nuclear Energy, Ltd. (Japan)

**2. Regulation Experience on Air Cleaning Units of HVAC System for the Nuclear Power Plants in Korea - 14121**

**Jeongken Lee**, Daesik Yook, Hongtae Kim, Seongyoung Jeong, Korea Institute of Nuclear Safety (Republic of Korea)

**3. Problems and Practice of Cutting and Disposing Oversized Decommissioned Equipment of Nuclear Power Plants - 14570**

**Alexander Gelbutovskiy**, Alexander Troshev, Peter Cheremisin, Sergey Zaritovskiy, ECOMET-S (Russia)

**4. Separation of Radiocobalt and Radionickel from NPP Evaporation Concentrates - 14395**

**Risto Koivula**, Risto Harjula, Maria Kaipainen, University of Helsinki (Finland)

**5. Test Works of Treatment of Problematic Evaporator Concentrate from Kola NPP - 14081**

**Alexander Savkin**, SIA Radon (Russia)

**6. Nuclear Waste Management Approach for New Build Nuclear Power Plants in the People's Republic of China - 14663**

**David Bergmann**, EnergySolutions

**Poster Session 48**

**8:30 AM - 12:00 PM 1st Floor Foyer**

**Topic: P&T Posters: Emerging Packaging and Transportation Issues**

Co-Chairs: **Olaf Oldiges**, Daher-NCS (Germany); **Chi-Fung Tso**, Arup (United Kingdom)

Lead Organizer: **Olaf Oldiges**, Daher-NCS

Paper Reviewer: **Chi-Fung Tso**, Arup

**1. Experimental Investigation of RAM Packages Impact Limiters - 14256**

**Andre Musolff**, Thomas Quercetti, Bernhard Droste, Karsten Müller, Klaus-Peter Gruender, BAM Federal Institute for Materials Research and Testing (Germany)

**2. Enhancing Safety and Security in Transport of Radioactive Material-Romanian Experience - 14057**

**Gheorghe Vieru**, Institute for Nuclear Research (Romania)

**3. Methodology and Experiences of Experimental Drop and Fire Testing of Radioactive Waste Containers for Final Disposal - 14478**

**Thomas Quercetti**, Karsten Müller, Bernhard Droste, Holger Völzke, Uwe Zencker, Guenter Wieser, Tino Neumeyer, BAM Federal Institute for Materials Research and Testing (Germany)

**5. Development of a Wood Material Model for Impact Limiters of Transport Packages - 14111**

**Germer Eisenacher**, Frank Wille, Bernhard Droste, Martin Neumann, BAM Federal Institute for Materials Research and Testing (Germany)

**6. Potential Impact of Interfacial Bonding Efficiency on Used Nuclear Fuel Vibration Integrity during Normal Transportation - 14502**

**Jy-An Wang**, Hao Jiang, Hong Wang, Oak Ridge National Laboratory

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**March 4, Tuesday PM**

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**Session 49**

**1:30 PM - 5:00 PM Room 102BC**

**Panel: Tuesday US DOE Featured Site: Hanford – Office of River Protection - Part 2 of 2**

Co-Chairs: **Ellen Mattlin**, *US DOE*; **Dawn Wellman**, *Pacific Northwest National Laboratory*  
Lead Organizer: **Dawn Wellman**, *PNNL*  
Add'l Organizer: **Ellen Mattlin**, *US DOE*  
Panel Reporter: **Andrea Hopkins**, *Washington River Protection Solutions, LLC*

This panel will focus on the Hanford Site, Office of River Protection (ORP) of the US DOE located in Richland, WA. It will showcase an overview and latest strategy for ORP as well as recent progress and challenges at the Waste Treatment and Immobilization Plant (WTP) and Tank Farms. After the presentations, the panel will discuss with the audience overcoming the challenges they encountered.

- Waste Treatment and Immobilization Plant (WTP) Issue Resolution – **William Hamel and Peggy McCullough**
- ORP Overview and Strategy – **Kevin Smith**
- Tank Farm Challenges – **Thomas Fletcher and Dave Olson**

**Panelists include:** **Kevin Smith**, *Manager, US DOE ORP*; **William Hamel**, *Assistant Manager WTP, US DOE ORP*; **Peggy McCullough**, *Project Director, Bechtel National*; **Thomas Fletcher**, *Assistant Manager Tank Farms Project, US DOE ORP* and **Dave Olson**, *President and Project Manager, Washington River Protection Solutions (WRPS)*.

**Session 50**

**1:30 PM - 5:00 PM Room 105C**

**Finland/Sweden Featured Nations: NPP D&D and Waste Disposition**

Co-Chairs: **Larry Camper**, *US NRC*; **Graham Fairhall**, *UK National Nuclear Laboratory (United Kingdom)*  
Lead Organizer & Paper Reviewer: **Leif Eriksson**, *Nuclear Waste Dispositions*  
Add'l Organizers: **Robert Havel**, *SKB (Sweden)*; **Magnus Holmqvist**, *SKB International AB (Sweden)*; **Esko Tusa**, *Fortum Power and Heat Oy (Finland)*

- 1:35 Decommissioning and Disposal of the Decommissioning Waste at the Site of the Loviisa Nuclear Power Plant - 14254**  
**Matti Kaisanlahti**, *Fortum Power and Heat Oy (Finland)*
- 2:00 On-Site Disposal of Radioactive Waste as a Part of Finnish Radioactive Waste Management System - 14547**  
**Jari Tuunanen**, *Fortum Power and Heat Oy (Finland)*; **Pekka Viitanen**, *Teollisuuden Voima Oyj (Finland)*
- 2:25 Assessment of Radioactivity Inventory in Swedish LWRs at Time of Decommissioning - 14279**  
**Arne Larsson**, *Klas Lundgren, Studsvik Nuclear AB (Sweden)*
- 2:50 Detailed Decommissioning Plans for the Oskarshamn and Forsmark Nuclear Power Plants in Sweden - 14008**  
**Niklas Bergh**, *Gunnar Hedin, Westinghouse Electric Sweden AB*; **Fredrik De la Gardie**, *Swedish Nuclear Fuel and Waste Management Co. (Sweden)*
- 3:20 Reactor Internals Segmentation Experience in the Nordic Region - 14267**  
**Per Segerud**, *Stefan Fallstrom, Lennart Nilsson, Westinghouse Electric Sweden AB (Sweden)*
- 3:45 RPV In-Situ Segmentation Combined with Off-Site Treatment for Volume Reduction and Recycling - 14286**  
**Per Lidar**, *Arne Larsson, Studsvik Nuclear AB*; **Per Segerud**, *Gunnar Hedin, Westinghouse Electric Sweden AB (Sweden)*
- 4:10 Planning for the Dismantling of the Barsebäck NPP - 14558**  
**Håkan Lorentz**, *Barsebäck Kraft AB (Sweden)*
- 4:35 Disposal of LLW/ILW: The Extension of the SFR-Repository for Handling and Disposal of Decommissioning Waste - 14489**  
**Börje Torstenfelt**, *Peter Larsson, Fredrik Vahlund, Swedish Nuclear Fuel and Waste Management Co (Sweden)*

## Session 51

1:30 PM - 3:10 PM Room 104AB

### Panel: US DOE - Energy Facility Contractors Group's Knowledge Portal (EFCOG) Review

Co-Chairs: **John Longenecker**, *Longenecker & Associates, Inc.*; **Susan Stiger**, *Bechtel National, Inc.*  
Lead Organizer: **John Longenecker**, *Longenecker & Associates, Inc.*  
Add'l Organizer & Panel Reporter: **Mark Frei**, *Longenecker & Associates, Inc.*

This panel will focus on the various areas of EFCOG. EFCOG promotes excellence in all aspects of the operation, management, and integration of US DOE facilities in a safe, environmentally sound, efficient and cost effective manner through the ongoing exchange of information on lessons learned. The purpose of this knowledge portal is to provide a vehicle to allow members to keep abreast of the latest news, issues, and events across the US DOE complex; for the sharing of innovative ideas and practices and to collaborate virtually on the development and implementation of new processes and practices. A short discussion of EFCOG history and accomplishments will be followed by an overview of Working Groups (WGs) and critical updates. WG updates include Project Management, Integrated Safety Management/Quality Assurance, Environmental, Safety and Health; Safeguards/Security and Enforcement; Contractor Assurance, Sustainability/Infrastructure Management, Business Management, Waste Management, Environmental Remediation/D&D, Engineering Practices, and Safety Analysis.

**Panelists include:** **John McDonald**, *ESH&Q Manager, Washington River Protection Solutions, Integrated Safety Management & Quality Assurance (ISMQA) WG*; **Donna Governor**, *Lawrence Livermore National Laboratory, ISMQA WG*; **Sonny Goldston**, *Manager, Integrated Waste Strategy, EnergySolutions, Waste Management WG*; **Bill Shingler**, *Vice President, Operations Environmental and Nuclear, Fluor Government Group, Business Management WG*; **Tracy Heidelberg**, *Chief Financial Officer, Fluor-B&W Portsmouth, Business Management WG* and **Arnold Whipple**, *Deputy Director, Planning & Site-Wide Integration, Fluor-B&W Portsmouth, Project Management WG.*

## Session 52A

3:15 PM - 5:00 PM Room 104AB

### Panel: Addressing the Small Business Barriers in Contracting with the US DOE

Co-Chairs: **John Coffman**, *ReNuke Services, Inc.*; **Jim Fiore**, *Fiore Consulting*  
Lead Organizer: **Gary Benda**, *WM Symposia*  
Add'l Organizers: **John Coffman**, *ReNuke Services, Inc.*; **John Evett**, *US DOE - EM*; **Vanessa Vanover Hatfield**, *E2 Consulting Engineers, Inc.*  
Panel Reporter: **Vanessa Vanover Hatfield**, *E2 Consulting Engineers, Inc.*

This panel will focus on the barriers for small businesses in contracting with the US DOE. In 2014, the US DOE has a prime small business goal of 6.59% and attaining this goal will be challenging. This panel will interact extensively with the audience in discussing methods to achieve this goal and barriers that need to be mitigated. All WM2014 Exhibitors can attend this session without a WM technical registration badge as a conference service.

**Panelists include:** **Jack Surash**, *Deputy Assistant Secretary for Acquisition and Project Management, US DOE*; **John D. Hale III**, *Director, Office of Small and Disadvantaged Business Utilization, US DOE*; **Greg Gonzales**, *Small Business Program Manager, NNSA, Albuquerque Complex*; **Nick Stanisich**, *CEO, Portage, Inc*; **Patricia Holsapple**, *CEO, Swift and Staley, Inc.*; **Chris Honkomp**, *Director of Procurement Planning, US DOE* and **John Evett**, *Small Business Program Manager, Office of Environmental Management, US DOE.*

## Session 52B

3:15 PM - 5:00 PM Room 212BC

### Roundtable: Background and Analysis of the Recently Released US DOE FY 2015 Budget

Co-Chairs: **Ed Helminski**, *Martin Schneider, Weapons Complex Monitor*  
Lead Organizer: **Gary Benda**, *WM Symposia*  
Add'l Organizer and Panel Reporter: **Martin Schneider**, *Weapons Complex Monitor*

This roundtable will focus on notable US DOE budget changes from the current year, potential new starts and programs, analysis of trends and identification of key challenges and opportunities. President Obama will

submit the FY 2015 budget request to Congress on Tuesday, March 4, the morning of this session. The moderator of this roundtable, Martin Schneider – Chief Executive Officer of the Weapons Complex Monitor, will present the same-day analysis and insight into the request for key DOE programs, including the Office of Environmental Management (US DOE EM), the Office of Nuclear Energy (US DOE NE) and the National Nuclear Security Administration (US DOE NNSA). Audience participation is encouraged. Additional sessions on the US DOE budget and contracting opportunities are scheduled for Wednesday morning, Session 68 and 69.

**Session 53**  
**1:30 PM - 3:10 PM Room 103AB**

**Panel: US Nuclear Power Plant Waste Management - LLW Disposal Issues**

Co-Chairs: **Mark Lewis**, *EnergySolutions*; **Coleman Miller**, *Pacific Gas & Electric*  
Lead Organizer & Panel Reporter: **Coleman Miller**, *Pacific Gas & Electric*  
Add'l Organizers: **Mark Lewis**, *EnergySolutions*

This panel will feature senior utility managers discussing issues with US radioactive waste disposal site operators as panelists.

**Panelists include:** **James Miller**, *Senior Vice President, (Clive Facility), EnergySolutions*; **Dan Burns**, *Senior Vice President, (Andrews Texas Site), Waste Control Specialists, LLC* and **James Harris**, *(Barnwell South Carolina Site), EnergySolutions*.

**Session 54**  
**3:15 PM - 5:00 PM Room 103AB**

**Panel: US Nuclear Power Plant Waste Management - LLW Processor Issues**

Co-Chairs: **Mark Lewis**, *EnergySolutions*; **Coleman Miller**, *Pacific Gas & Electric*  
Lead Organizer & Panel Reporter: **Mark Lewis**, *EnergySolutions*  
Add'l Organizers: **Coleman Miller**, *Pacific Gas & Electric*

This panel will focus on senior utility managers discussing issues with US commercial LLW processors. LLW processors will have an opportunity to update utilities/NPPs on new or different services or

technologies being offered to assist in their radioactive waste management goals.

**Panelists include:** **Scott Eckler**, *Sales and Marketing Manager, Alaron*; **Troy Eshleman**, *Vice President, Commercial Processing Division, EnergySolutions*; **John Hagan**, *Sales Manager, Perma-Fix Environmental Services, Inc.*; **Howard Stevens**, *Vice President of Engineering, Studsvik* and **Judy Hardt**, *Operations Manager, Toxco MMC*.

**Session 55**  
**1:30 PM - 3:10 PM Room 106C**

**Efficiencies and Lessons Learned in Transportation**

Co-Chairs: **Kent McDonald**, *Pacific Northwest National Laboratory*; **Chi-Fung Tso**, *Arup (United Kingdom)*  
Lead Organizer: **Olaf Oldiges**, *Daher-NCS (Germany)*  
Add'l Organizers: **Mike Snyder**, *MHF Services*; **Chi-Fung Tso**, *Arup (United Kingdom)*  
Paper Reviewer: **Larry Harmon**, *Project Enhancement Corporation*

- 1. Optimizing a National Transportation Program for Efficiency and Effectiveness - 14187**  
**Stephen O'Connor**, *Ella McNeil, US DOE*
- 2. Operating Experience and Lessons Learned in the Use of Soft-Sided Packaging for Transportation and Disposal of Low Activity Radioactive Waste - 14112**  
**Ashok Kapoor**, *US DOE*; **W.T. (Sonny) Goldston**, *EnergySolutions*; **Sydney Gordon**, *National Security Technologies, LLC*

**Session 56**  
**3:15 PM - 5:00 PM Room 105AB**

**Panel: Challenges in Manufacturing of Radioactive Material Packages and Containers**

Co-Chairs: **Stephen O'Connor**, *US DOE*; **Karlan Richards**, *Bechtel National, Inc*  
Lead Organizer: **Ashok Kapoor**, *US DOE*  
Add'l Organizers: **Larry Harmon**, *Project Enhancement Corporation*; **Karlan Richards**, *Bechtel National, Inc*  
Panel Reporter: **Karlan Richards**, *Bechtel National*

This panel will focus on challenges faced by manufacturers in providing high quality radioactive material packaging consistently in a tentative budget

environment. Specifically, the panel discussion will focus on manufacturing challenges of commonly used packaging used for LLW and radioactive material (such as: IP-1, IP-2 and IP-3, and Type A). The panelists from the container industry will discuss issues they face in several key areas including: 1) maintaining production capability and developing necessary infrastructure in a constantly changing federal budget environment, 2) meeting customer specific requirements beyond the regulatory requirements, and 3) maintaining rigorous quality assurance and quality control capabilities for small production lots.

**Panelists include:** **Douglas Hatch**, *Director, MHF Services*; **Mike Lewis**, *QA Manager, Container Products Corporation*; **Bill Smart**, *Nuclear Sales Director, PacTec*; **Steve Fielden**, *President, Container Technologies Industries, Inc.*; **Rob Despain**, *V.P. Business Development, Petersen, Inc.* and **Howard Skolnik**, *President, Skolnik Industries, Inc.*

### Session 57

**1:30 PM - 3:10 PM Room 105AB**

#### **Panel: Progress in Dealing with the World's Stockpile of Used Nuclear Fuel - How Can Consolidated Interim Storage and Reprocessing Help?**

Co-Chairs: **Chris Phillips**, *EnergySolutions*; **Stephen Unwin**, *Pacific Northwest National Laboratory*  
Lead Organizer & Panel Reporter: **Tom Brouns**, *Pacific Northwest National Laboratory*  
Add'l Organizers: **Chris Phillips**, *EnergySolutions*; **Stephen Unwin**, *PNNL*

This panel focuses on options, technical approaches, and technical, regulatory, and non-proliferation/security issues important to evaluation and design of treatment, interim storage and disposal of UNF/SNF. Uncertainty regarding the future of geologic disposal of HLW and UNF/SNF in the US, the potential role of fuel recycling to reduce disposal capacity, and expected increases in new nuclear power plants has elevated the need for consideration of interim and retrievable storage and alternative disposal options for UNF/SNF and US DOE immobilized HLW. The session covers options for transport, consolidated storage, treatment and ultimate disposal of commercial and government UNF/SNF and immobilized HLW.

**Panelists include:** **Jeff Williams**, *Director, Nuclear Fuels Storage and Transportation Planning Project, Office of Nuclear Energy, US DOE*; **Keith McConnell**, *Director, Waste Confidence Directorate, US NRC*; **Graham Jonsson**, *Lead Programme Manager, Delivery Directorate, Nuclear Decommissioning*

*Authority (United Kingdom)*; **Horst Geckeis**, *Head of Institute for Nuclear Waste Disposal, Karlsruhe Institute of Technology (Germany)* and **Christopher Phillips**, *Vice President, Applied Technology, EnergySolutions.*

### Session 58

**1:30 PM - 5:00 PM Room 106A**

#### **Geologic Disposal Methodologies and Modeling**

Co-Chairs: **Roger Nelson**, *US DOE*; **Abraham Van Luik**, *US DOE-EM*  
Lead Organizer & Paper Reviewer: **Roger Nelson**, *US DOE*  
Add'l Organizers: **Gérald Ouzounian**, *Andra (France)*; **Chuan-Fu Wu**, *ES&H Solutions*

##### **1:35 A Decision Methodology for Prioritizing R&D Supporting Geologic Disposal of SNF/HLW in Salt - 14030**

**S. David Sevougian**, *Robert MacKinnon, Sandia National Laboratories*

##### **2:00 Virtual Underground Laboratory for Rock Salt – VIRTUS - 14247**

**Klaus Wiczorek**, *GRS mbH*; **Christian Mueller**, *DBE Technology*; **Joachim Behlau**, *Federal Institute for Geosciences and Natural Resources (BGR)*; **Steffen Masik**, *Fraunhofer IFF (Germany)*

##### **2:25 Three-Dimensional Geological and Geomechanical Modelling of a Repository for Waste Disposal in Deep Rock Salt Formations - 14275**

**Joachim Behlau**, *Stefan Heusermann, Sandra Fahland, Federal Institute for Geosciences and Natural Resources (BGR) (Germany)*

##### **2:50 Performance Assessment Modeling of a Generic UNF/HLW Repository in Salt - 14313**

**Geoff Freeze**, *W. Payton Gardner, Palmer Vaughn, S. David Sevougian, Paul Mariner, Vince Mousseau, Sandia National Laboratories*

##### **3:20 Simulations in Support of the Salt Defense Disposal Initiative (SDDI): Water and Salt Transport Driven by Heat Generating Nuclear Waste in Bedded Salt - 14512**

**Philip Stauffer**, *Bruce Robinson, Dylan Harp, Amy Jordan, Hakim Boukhalfa, Yassin Laybed, James Ten Cate, Los Alamos National Laboratory*; **Roger Nelson**, *US DOE*

##### **3:45 WIPP Compliance Recertification Application 2019 (CRA-2019) - Big Changes Coming - 14148**

**Russell Patterson**, *US DOE*; **Michael Gross**, *MG Enterprises*

**4:10 Changes, Approach, and Results for the 2014 WIPP Compliance Recertification Application Performance Assessment - 14047**

**Chris Camphouse**, Sungtae Kim, Thomas Kirchner, Bwalya Malama, Todd Zeitler, Sandia National Laboratories; Dwayne Kicker, S.M. Stoller Corporation

**4:35 Canada's Deep Geological Repository for Used Nuclear Fuel – An Update on the Status of the Geoscientific Site Evaluation Process - 14643**

**Mahrez Ben Belfadhel**, Alec Blyth, Sarah Hirschorn, Jennifer McKelvie, Aaron DesRoches, Maria Sanchez-Rico Castejon, Andy Parmenter, Andres Urrutia-Bustos, Andre Vorauer, Nuclear Waste Management Organization (Canada)

## Session 59

**1:30 PM - 5:00 PM Room 106B**

### Stabilization/Immobilization of HLW, SNF/UNF and Long-lived Alpha/TRU

Co-Chairs: **John Gregory**, AREVA Federal Services, LLC; **Leslie Jardine**, L.J. Jardine Services  
Lead Organizer: **John Gregory**, AREVA Federal Services, LLC

Add'l Organizers: **Jonathan Bricker**, Savannah River Remediation, LLC; **Sharon Marra**, Savannah River National Laboratory

Paper Reviewer: **Sharon Marra**, SRNL

**1:35 High-Temperature Pressing of Silver-Exchanged Mordenite into a Potential Iodine Waste Form - 14096**

**Robert Jubin**, Stephanie Bruffey, Oak Ridge National Laboratory

**2:00 Organic Waste Treatment by Incineration and Coupled Incineration/Vitrification Process - 14059**

**Patrice Charvin**, Florent Lemont, Sébastien Francois, CEA Marcoule (France)

**2:25 Design, Development & Operational Experience of Demonstration Facility for Cs-137 Source Pencil Production - 14271**

**Satish Patil**, Puneet Srivastava, SK Mishra, SS Khan, R Soni, Daya Banerjee, Pyari Kishore Wattal, Bhabha Atomic Research Centre (India)

**2:50 Laboratory Capabilities for Qualification of Hanford Tank Waste Feed for Treatment and Vitrification - 14377**

**Aruna Arakali**, Peter Benson, Jeffrey Markillie, Ross Hamlett, URS Corporation; Stuart Arm, Scott Saunders, Washington River Protection Solutions

**3:20 Development and Initial Testing of Off-Gas Recycle Liquid from the WTP Low Activity Waste Vitrification Process - 14333**

**Daniel McCabe**, William Wilmarth, Charles Nash, Megan Morse, Kathryn Taylor-Pashow, Duane Adamson, Charles Crawford, Savannah River National Laboratory

**3:45 Consensus Standardization of Slurry Simulant Development Process to Reduce Design Risk within the US DOE Complex - 14635**

**Gary L. Smith**, Carl Enderlin, Beric Wells, Dean E. Kurath, Kayte Denslow, Pacific Northwest National Laboratory

**4:10 Update on Integrated Waste Treatment Unit (IWTU) Testing and Readiness for Start-Up - 14660**

Gene Balsmeier, **Steve Binni**, CH2M-WG Idaho, LLC; Scott Rogers, Studsvik; Kevin Ryan, J. Brad Mason, Kevin Ryan, J. Brad Mason, THOR Treatment Technologies, LLC

**4:35 Summary of Cold Crucible Vitrification Tests Results with Savannah River Site High Level Waste Surrogates - 14464**

**Sergey Stefanovsky**, SIA RADON (Russian Federation); Vladimir Lebedev, OECD (France); James Marra, Savannah River National Laboratory

## Session 60

**1:30 PM - 3:15 PM Room 102A**

### Radiological Characterization Methods and Data Analysis Part 1 of 2

Co-Chairs: **Frazier Bronson**, Canberra Industries Inc - AREVA Group; **Loong Yong**, Spectra Tech, Inc.

Lead Organizer & Paper Reviewer: **Frazier Bronson**, Canberra Industries Inc - AREVA Group  
Add'l Organizers: **Loong Yong**, Spectra Tech, Inc.

**1:35 Nuclide Distribution in the Metal Recycling Process - 14290**

**Per Lidar**, Maria Lindberg, Arne Larsson, Patrik Konneus, Studsvik Nuclear AB (Sweden)

**2:00 Performance Assessment of a Correction Matrix Effect Method Based on a H-3 Drum Monitor on a DDT Measurement Station for the Assay of Fissile Mass in Large-Size Drums - 14026**

**Rodolphe Antoni**, Christian Passard, Bertrand Perot, CEA (France); Pierre Strock, AREVA E&P (France); Marc Batifol, François Guillaumin, Gabriele Grassi, AREVA NC (France)

**2:25 Methods for Reduction of the Minimal Detectable Activity in Neutron Assay of High Mass/High Z Objects - 14504**

**Alan Simpson**, Martin Clapham, Pajarito Scientific Corporation (United Kingdom)

**2:50 Implementation of a Surface Contaminated Object Characterization Program at LANL - 14346**

**Randy Lucero**, John Veilleux, Adam Gallegos, Ryan Hammon, Pajarito Scientific Corporation; Kathleen Gruetzmacher, Roland Bustos, Lucas Gallegos, Scott Ferran, Felicia Archuleta, Los Alamos National Laboratory

**Session 61**

**3:15 PM - 5:00 PM Room 102A**

**Radiological Characterization Methods and Data Analysis Part 2 of 2**

Co-Chairs: **Frazier Bronson**, Canberra Industries Inc - AREVA Group; **Loong Yong**, Spectra Tech, Inc.

Lead Organizer: **Frazier Bronson**, Canberra Industries Inc - AREVA Group

Add'l Organizer & Paper Reviewer: **Loong Yong**, Spectra Tech, Inc.

**3:20 Radioactive Waste Characterization Strategies; Statistical Comparison Dose to Curie and Gamma Spectroscopy Analysis Methods - 14229**

**Steven Singledecker**, Kathleen Gruetzmacher, Richard Staroski, Roland Bustos, Lucas Gallegos, Los Alamos National Laboratory

**3:45 Non-Destructive Assay Applications Using Temperature-Stabilized Large Volume CeBr Detectors - 14277**

**Dante Nakazawa**, Frazier Bronson, Canberra Industries Inc - AREVA Group

**4:10 Radiation Dose Rates and Exposure Associated to Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) at Locations of a Portuguese Coal-Fired Power Plant - 14431**

**Maria de Lurdes Dinis**, Porto University; Antonio Fiuza, Joaquim Góis, Ana Cristina Meira Castro, José Soeiro Carvalho, Porto University of Portugal (Portugal)

**4:35 NuLab Marcoule: A Laboratory Facility Dedicated to Support Dismantling Operations - 14212**

**Olivier Dugne**, Lionel Bec-Espitalier, Jeremy Rosen, CEA (France)

**Session 62**

**1:30 PM - 5:00 PM Room 101C**

**Waste Optimization/Minimization and Harmonization During D&D**

Co-Chairs: **Anthony Banford**, National Nuclear Laboratory (United Kingdom); **Maria Lindberg**, Studsvik Nuclear AB (Sweden)

Lead Organizer: **Maria Lindberg**, Studsvik Nuclear AB  
Add'l Organizer & Paper Reviewer: **Anthony Banford**, NNL

**1:35 Turning the Surface Contamination Object (SCO) Process into a Production Operation for the Remediation of the TRU Waste as Part of the LANL 3,706 m3 Campaign - 14115**

**Eilidh Wilson**, **Michael J. Romero**, Los Alamos National Laboratory; **Deborah Williams**, Miles Smith, Leah Lavallee, EnergySolutions; **David Nickless**, Lee Bishop, US DOE

**2:00 Waste Offsetting: The Commodification of Low-Level Radioactive Waste (LLW) - 14220**

**Andrew Stewart**, Canadian Nuclear Safety Commission (Canada)

**2:25 Operation of a Waste Management Area During Decommissioning - 14327**

**Jason Martino**, Dwayne Onagi, Atomic Energy of Canada Limited (Canada)

**2:50 Development of Decommissioning Strategy for Humboldt Bay Power Plant - 14527**

**Kerry Rod**, Pacific Gas & Electric; **Steven Shelanskey**, Anata Management Solutions; **John Kristofzski**, Robert Cronin, CH2M HILL, Inc.

**3:20 Cesium and Strontium Removal with Highly Selective Ion Exchange Media in Fukushima and Cesium Removal with Less Selective Media - 14018**

**Esko Tusa**, Fortum Power and Heat Oy (Finland)

**3:45 Characterization and Thermal Treatment of Carbon-14 on Irradiated Graphite Surfaces - 14204**

**Mary Lou Dunzik-Gougar**, James Cleaver, Daniel LaBrier, Shilo McCrory, Tara Smith, Kathy Nelson, Idaho State University

**4:10 Enhanced Recovery of Radionuclides from Irradiated Graphite by Sulfuric Acid-Graphite Intercalation and Leaching - 14551**

**Jacques Botsoa**, Gabriel Rodriguez Chiti, SUBATECH; **Emmanuel Costa**, Daher Corporate Nuclear and Energy Engineering; **Abdesselam Abdelouas**, Ecole De Mines De Nantes (France)



## Session 63

1:30 PM - 5:00 PM Room 101B

### Innovative Field Monitoring for Environmental Remediation

Co-Chairs: **David Eaton**, CH2M-WG Idaho, LLC; **Charles Waggoner**, Mississippi State University  
Lead Organizer & Paper Reviewer: **David Eaton**, CH2M-WG Idaho, LLC  
Add'l Organizers: **Ella Feist**, CH2MHILL; **Charles Waggoner**, Mississippi State University

- 1:35 Innovative Field Monitoring: Legacy Successes and the Future of Long-term Monitoring** - 14571  
*Jeff Myers*, Dean Hoffman, Michael Boerste, URS Professional Solutions
- 2:00 US EPA Superfund Counts Per Minute (CPM) Electronic Calculator** - 14336  
*Stuart Walker*, US EPA
- 2:25 Radiological Assessment for the Removal of Legacy BPA Power Lines/ Components that Cross the Hanford Site** - 14039  
*William Millsap*, Daniel J. Brush, Mission Support Alliance
- 2:50 Data Integration with Geospatial Visualization Tools at the Hanford Site** - 14369  
*Marisa Renevitz*, Longenecker & Associates, supporting Mission Support Alliance at US DOE Richland Operations Office; *Jon Peschong*, US DOE; *Brett Simpson*, Vista Engineering Technologies
- 3:20 High Performance 3D Geophysical Imaging and 4D Time-Lapse Monitoring of Subsurface Contamination and Associated Processes at the Hanford Site** - 14362  
*Tim Johnson*, Dawn Wellman, John Zachara, Michael Truex, Chris Strickland, Jon Thomle, Pacific Northwest National Laboratory; *Roelof Versteeg*, Subsurface Insights; *R. Douglas Hildebrand*, US DOE; *Dale Rucker*, hydroGEOPHYSICS, Inc.
- 3:45 A Technology for Real-Time Monitoring of VOCs Emanating from the Hanford Tank Farms** - 14360  
*Joe Sears*, James Conca, RJ Lee Group, Inc.; *Larry Lockrem*, LLL GeoChem
- 4:10 Improved Three-Dimensional Resistivity Data Acquisition Capabilities at the Hanford Site** - 14146  
*Marc Levitt*, *Nigel Crook*, Michael McNeill, hydroGEOPHYSICS, Inc.; *R. Douglas Hildebrand*, US DOE; *Danney Glaser*, *Susan Eberlein*, Washington River Protection Solutions

- 4:35 MARSAME Applications at Humboldt Bay Power Plant** - 14529  
*John Albers*, Pacific Gas & Electric; *Marty Erickson*, Bartlett Nuclear, Inc.; *Bill Barley*, RosBar Enterprises

## Session 64

3:15 PM - 5:00 PM Room 106C

### Deep Vadose Zone Characterization and Remediation Technologies

- Co-Chairs: **Kurt Gerdes**, US DOE; **John Kristofzski**, CH2M HILL, Inc.  
Lead Organizer: **Kurt Gerdes**, US DOE  
Add'l Organizers: **Peter Booth**, Hylton Environmental (United Kingdom); **Briant Charboneau**, US DOE  
Paper Reviewer: **Nelson Walter**, AMEC
- 3:20 Radionuclide Containment Properties of Fractured and Faulted Volcanic Tuff Units at the T-Tunnel Complex, Rainier Mesa, Nevada National Security Site** - 14013  
*Donald "Matt" Reeves*, *Rishi Parashar*, *Karl Pohlmann*, *Yong Zhang*, *Chuck Russell*, *Jenny Chapman*, Desert Research Institute; *Eric LaBolle*, University of California, Davis
- 3:45 Flux-Based Evaluation of Perched-Water in the Deep Vadose Zone at the Hanford Site** - 14051  
*Michael Truex*, Mart Oostrom, Pacific Northwest National Laboratory
- 4:10 The Effect of Ca Ions on the Removal of U(VI) via In-Situ Ammonia Gas Injection at the Hanford Site 200 Area** - 14434  
*Yelena Katsenovich*, *Claudia Cardona*, *Leonel Lagos*, Florida International University
- 4:35 Modeling of Electrical Resistivity Data in the Presence of Electrically Conductive Well Casings and Waste Storage Tanks** - 14609  
*Tim Johnson*, *Mark Triplett*, *Dawn Wellman*, Pacific Northwest National Laboratory

## Poster Session 65A

1:30 PM - 5:00 PM 1st Floor Foyer

### Topic A: ER Posters: Environmental Remediation at the US DOE Hanford Site

Co-Chairs: **David Wallace**, *Parsons Brinckerhoff*;  
**Robert Zelmer**, *Environmental Legacy Assoc.*  
(Canada)

Lead Organizer: **Tjalle "Chuck" Vandergraaf**,  
*Consultant* (Canada)

Paper Reviewer: **Myron Koop**, *Parsons Brinckerhoff*

**A1. Technical Basis for Contaminated Pore-Water Extraction from the Vadose Zone** - 14052

**Michael Truex**, *Mart Oostrom, Pacific Northwest National Laboratory*

**A2. A Comparison of Toxicology Studies of Vulnerability of Early Life Stages of Salmon to Hexavalent Chromium at Hanford** - 14140

**Michael Gochfeld**, *Robert Wood Johnson Medical School*; **Joanna Burger**, *Rutgers University*

**A3. High-Resolution Spectral Gamma Logging for Characterization of Radiological Contaminant Plumes in the Deep Vadose Zone** - 14538

**Rick McCain**, *Paul Henwood, Arron Pope, S.M. Stoller Corporation*

### Topic B: ER Posters: Strategies for Environmental Remediation

Co-Chairs: Tjalle "Chuck" Vandergraaf, *Consultant*  
(Canada); **Robert Zelmer**, *Environmental Legacy Assoc.* (Canada)

Lead Organizer: Tjalle "Chuck" Vandergraaf,  
*Consultant*

Paper Reviewer: **Leo van Velzen**, *NRG-Arnhem*  
(Netherlands)

**B1. Hanford Site Cleanup Overview** - 14432

**Cameron Hardy**, *US DOE*

**B2. Plateau Remediation Company – Going Green with an Automated Procedure System** - 14611

**Sara Austin**, *Ron Nelson, Kathy Hibbs, Adria Johnson, CHPRC*

**B3. Four Pillars of Successful Cross-Agency Partnering for Environmental Remediation** - 14349

**Laurel Boucher**, *The Laurel Co.*

**B4. Utility Electricity Services Contract—Third Party Financing for Energy Efficiency Projects** - 14374

**Jennifer Ollero**, *Ann Shattuck, Lori Fritz, Mission Support Alliance*

### Topic C: ER Posters: Radiological and Analytical Emerging Issues

Co-Chairs: **Tjalle "Chuck" Vandergraaf**, *Consultant*  
(Canada); **Robert Vellinger**, *TerranearPMC, LLC*

Lead Organizer: **Tjalle Vandergraaf**, *Consultant*  
Paper Reviewer: **Robert Vellinger**, *TerranearPMC*

**C1. National Contribution to Organization and Carrying Out Monitoring Activities on Assessment of Radiation and Ecological Situation in Uranium Tailings of SE Vostokredmet** - 14034

**Furkat Zoitov**, **Ilkhom Mirsaidov**, *Bakhtiyor Adkhamov, Nuclear and Radiation Safety Agency (Tajikistan)*

**C2. Change of Radiocesium Concentration in Trees Leaves: Two Years' Observation Following the Fukushima Daiichi Nuclear Power Plant Accident** - 14150

**Shigeo Uchida**, *Keiko Tagami, National Institute of Radiological Sciences (Japan)*

**C3. The Auxiliary Radiation Detector System for Monitoring Radiation Level of the Spent Fuel Pool** - 14157

**Chan Hee Park**, *Joo Hyun Moon, Rinah Kim, Arim Lee, Dongguk University (Republic of Korea)*

**C4. Fast Analysis of Chlorinated Phenoxy Herbicides in Environmental Samples by Negative ESI LC-MS/MS** - 14337

**Wenjun Han**, *Benjamin Hicks, Elaine Wild, TestAmerica Laboratories, Inc.*

**C5. Inorganic Sorbents for Iodine Removal from Subsurface Plumes** - 14347

**Tatiana Levitskaia**, *Syandev Chatterjee, James Peterson, Emily Campbell, Pacific Northwest National Laboratory*

**C6. Concentration Ratios of Radiocesium from Soil to Wild Boar Observed in Fukushima Prefecture** - 14151

**Keiko Tagami**, *Shigeo Uchida, National Institute of Radiological Sciences (Japan)*

## Poster Session 66

1:30 PM - 5:00 PM 1st Floor Foyer

### Topic: CE&T Posters: Communications, Education and Training Issues

Co-Chairs: **Stacy Charboneau** and **Jeff Frey**, *US DOE*  
Lead Organizer & Paper Reviewer: **Elizabeth Bowers**,  
*Consultant*  
Add'l Organizer: **Linda Suttora**, *US DOE*

- 1. Accessing, Integrating and Using Existing Data to Make Critical Nuclear and Hazardous Waste Management Cleanup Decisions** - 14319  
**Jon Peschong**, *US DOE*; **Brett Simpson**, *Vista Engineering Technologies*
- 2. US EPA Superfund Radiation Risk Assessment: A Community Toolkit** - 14338  
**Stuart Walker**, *Melissa Greer Dreyfus, US EPA*

## Poster Session 67

1:30 PM - 5:00 PM 1st Floor Foyer

### Topic: ST Posters: Special Topics (ST) and WM Track Cross Cutting Technology Topics

Co-Chairs: **Mark Arenaz**, *US DOE*; **Kim Auclair**, *KD Auclair & Associates, LLC*  
Lead Organizer: **Kim Auclair**, *KD Auclair & Assoc., LLC*  
Paper Reviewer: **Ismo Aaltonen**, *Posiva Oy (Finland)*

- 1. Weld Repair of a Stamped Pressure Vessel in a Radiologically Controlled Zone** - 14006  
**Gary Cannell**, *Fluor Corporation*; **Jeff Huth**, *Randy Hallum, CH2M HILL PRC*
- 2. The Effective Elastic Coefficients of Porous Media with Simple Pore Geometries** - 14239  
**Cheo Kyung Lee**, *Handong Global University (Republic of Korea)*
- 3. The US DOE-FIU Cooperative Agreement – Addressing US DOE-EM's Technical Challenges** - 14607  
**Leonel Lagos**, *Peggy Shoffner, Florida International University*
- 4. Estimation of Permeability Changes Due to Contact with Highly Alkaline Ca-Rich Solution by Micro Flow-Cell of Granite Chip** - 14094  
**Daiki Kurata**, *Taiji Chida, Yuichi Niibori, Hitoshi Mimura, Tohoku University (Japan)*
- 5. Critical Dose of Internal Organs Internal Exposure** - 14332

**Narek Grigoryan**, *Yerevan State Medical University; Armen Amirjanyan, Nuclear and Radiation Safety Centre; Gagik Grigoryan, State Engineering University of Armenia (Armenia)*

- 6. Air Sample Conditioner Helps the Waste Treatment Plant Meet Emissions Standards** - 14646  
**John Glismeyer, Julia Flaherty, Mikhail Pekour, PNNL**

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## March 5, Wednesday AM

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### Session 68

8:30 AM - 10:10 AM Room 104AB

### **Panel: US DOE Procurement and Contracting Opportunities**

Co-Chairs: **Cathy Hickey**, *CH2M HILL, Inc.*; **John Longenecker**, *Longenecker & Associates, Inc.*  
Lead Organizer & Panel Reporter: **Cathy Hickey**, *CH2M HILL, Inc.*  
Add'l Organizer: **John Longenecker**, *Longenecker & Associates, Inc.*

This panel will focus on US DOE procurement and contracting activities. The panelists will provide perspectives and lessons learned from both US DOE procurement officials and the contractor community.

**Panelists include:** **Jack Surash**, *Deputy Assistant Secretary for Acquisition and Project Management, US DOE*; **Dave Hess**, *Procurement Director, EM Consolidated Business Center, US DOE*; **Kenneth Reuter**, *President and General Manager, Savannah River Remediation*; **Susan Stiger**, *EFCOG Chair, Bechtel National, Inc*; **Christopher Honkomp**, *Director, Procurement Planning, EM-51 US DOE* and **Reggie James**, *Director, Contract Assistance, EM-52 US DOE.*

## Session 69

10:15 AM - 12:00 PM Room 104AB

### Panel: Small Business Procurement and Contracting Opportunities with US DOE and US DOE Prime Contractors

Co-Chairs: **Roger Merrick**, *Remediation Resources Group, Inc.*; **Vanessa Vanover Hatfield**, *E2 Consulting Engineers, Inc.*

Lead Organizer: **John Coffman**, *ReNuke Services, Inc.*

Add'l Organizers: **Roger Merrick**, *Remediation Resources Group, Inc.*; **Vanessa Vanover Hatfield**, *E2 Consulting Engineers, Inc.*

Panel Reporter: **Vanessa Vanover Hatfield**, *E2 Consulting Engineers, Inc.*

This panel session will focus on small business procurement and contracting opportunities within the US DOE Complex. The US DOE encourages prime contractors to obtain goods and services from small and disadvantaged businesses and often tie these goals to contract award fee. Goods and services being considered for these procurements include: decontamination and decommissioning services, remediation services, transportation and disposal of radioactive waste, health physics equipment and services, emergency response planning and training, lab services, R&D products, waste treatment services, maintenance services, A/E services and professional consulting. This panel complements Session 68 which focuses on contracting directly with the US DOE and is open to all WM2014 participants, including Exhibitors.

**Panelists include:** **David Hess**, *Procurement Director, US DOE-EM Consolidated Business Center*; **Sam Artis**, *Director, Small Business Liaison Office, URS Corporation* **William (Bill) Badger**, *Public Affairs and Strategy Manager, CH2M HILL*; **Joe Yanek**, *Executive Director, Technical Support Services, FLUOR Government Group*; **Ed Wannemacher**, *Director of Business Development, B&W Technical Services Group* and **Richard E. Brown**, *Manager of Procurement, Bechtel National, Inc., Uranium Processing Facility, Y12 National Security Complex.*

## Session 70A

8:30 AM

Room 105AB

### International Deep Repository Progress – Part 1 of 3

Co-Chairs: Joe Franco, *US DOE*; Gérald Ouzounian, *Andra (France)*

Lead Organizer: Roger Nelson, *US DOE*

Paper Reviewer: Abraham Van Luik, *US DOE-EM*

#### 8:35 A Big Progress at High Level Radioactive Wastes Disposal in China: From Follow Suit to Science Driven - 14064

**Chunli Liu**, *Peking University (China)*

#### 9:00 R&D on the Feasibility of Operating a Geological Disposal Facility for High-Level and Long-Lived Radioactive Waste in Belgium- Further Development of Operational Concept - 14386

**Bernt Haverkamp**, *Wolfgang Filbert, Philipp Herold, Gerald Nieder - Westermann, DBE Technology GmbH (Germany)*; **Philippe Van Marcke**, *ONDRAF/NIRAS (Belgium)*

#### 9:25 The Implementing Geological Disposal of Radioactive Waste Technology Platform (IGD-TP) - Main Achievements to Date and Way Forward - 14078

**Jacques Delay**, *Andra (France)*; **Philippe Lalieux**, *Ondraf Niras (Belgium)*; **Raymond Kowe**, *UK NDA (United Kingdom)*

## Session 70B

After Session 70A

Room 105AB

### Panel: International Deep Repository Progress - Part 2 of 3

Co-Chairs: **Enrique Biurrin**, *DBE Technology GmbH (Germany)*; **Leif Eriksson**, *Nuclear Waste Dispositions*  
Lead Organizer: **Enrique Biurrin**, *DBE Technology GmbH*

Add'l Organizers: **Leif Eriksson**, *Nuclear Waste Dispositions*; **Gérald Ouzounian**, *Andra (France)*;

**Abraham Van Luik**, *US DOE-EM*

Panel Reporter: **Chuan-Fu Wu**, *ES&H Solutions*

This panel session focuses on the progress of deep repository programs, worldwide. While efforts on a deep geological repository for SNF/UNF and HLW in the US were terminated in 2010, several other repository programs continue to make considerable progress and deserve to be recognized. Panelists will be invited from national, multi-national, and international repository programs and organizations to report upon the current

status and future plans as well as the perceived reasons underlying the success and the failure of components of their respective repository program. This panel will provide a forum for interested parties to present, exchange, and take advantage of, as appropriate, repository progress, challenges, concepts/designs and other lessons learned around the world, including site characterization, site selection, research and development, licensing, construction, operation, and public acceptance and participation.

**Panelists include: Rogerio Pimenta Murao**, National Nuclear Energy Commission (Brazil); **Dr. Geckeis**, Director of the Institute for Nuclear Waste Management, Karlsruhe Institute of Technology (Germany); **Alan Carolissen**, South Africa Nuclear Energy Corporation (South Africa); **Denis Egorov**, Deputy Director, Unified State RW Management System Development (Russia); and **Nikita Medyantsev**, Head of PR, Media, International and Public Organizations Centre (Russia).

### Session 71

**8:30 AM - 12:00 PM Room 102BC**

#### **Papers/Panel: IAEA International Decommissioning Network: Maximizing the Benefits of Collaboration and Sharing of Experience**

Co-Chairs: **Christine Gelles**, US DOE; **Evgeny Kudryavtsev**  
Lead Organizer: **Irena Mele**, IAEA (Austria)  
Add'l Organizers: **Patrick O'Sullivan**, IAEA (Austria); **Andrew Szilagyi**, US DOE  
Panel Reporter & Paper Reviewer: **Andrew Szilagyi**, US DOE

This paper and panel session focuses on the IAEA special topic for WM2014. The first part of the session will comprise of invited papers on "Identifying and Managing Risks during Decommissioning". The second part of the session will be a panel on "Maximizing the Benefits of Collaboration and Sharing of D&D Experience".

**Panelists include: Joerg Kaulard**, TUV Rheinland Industrie Service GmbH (TIS)(Germany); **Katherine Moshonas Cole**, Candesco Limited (Canada); **Con Lyras**, Australian Nuclear Science and Technology Organization (Australia); **Andy Szilagyi**, US DOE-EM; **Emilio Garcia Neri**, ENRESA (Spain) and **Ernie Aikens**, AECL (Canada).

#### **1. Risk Management on Strategic and Operational Level during Decommissioning – First Outcomes of the DRiMa project at IAEA - 14467**

**Joerg Kaulard**, TÜV Rheinland Industrie Service GmbH (Germany); **Kristan Schruder**, Atomic Energy of Canada Limited (Canada); **Patrice Francois**, Institut de Radioprotection et de Sûreté Nucléaire (France); **Patrick O'Sullivan**, Vladan Ljubenov, IAEA (Austria); **Mark Pennington**, Sellafield Sites (United Kingdom); **Sasa Medakovic**, State Office for Radiological and Nuclear Safety (Croatia)

#### **2. Risk Management in the Execution of Decommissioning Programs: A Comparison Of International Approaches - 14535**

**Kristan Schruder**, Atomic Energy of Canada Limited (Canada); **Mark Pennington**, Sellafield Sites (United Kingdom)

#### **3. In-Situ Decommissioning Project Risk Management - 14596**

**Maria Elena Crespo**, Charles Negin, Project Enhancement Corporation

#### **4. Identifying and Managing Risks during Decommissioning of Jose Cabrera NPP - 14649**

**Manuel Rodriguez**, ENRESA (Spain)

### Session 72

**8:30 AM - 10:10 AM Room 103AB**

#### **Panel: 10 CFR Part 61.55 Waste Classification Scheme: Is it State of the Art or Are Any Changes Warranted?**

Co-Chairs: **Larry Camper**, US NRC; **Christine Gelles**, US DOE

Lead Organizer: **Larry Camper**, US NRC

Panel Reporter: **Rateb Abu Eid**, US NRC

This panel will discuss the Title 10 of the Code of Federal Regulations, Part 61.55 (10CFR61.55) waste classification framework. The US NRC is considering a comprehensive revision to risk-inform the waste classification framework with any conforming changes to the regulations as needed, using updated assumptions and referencing the latest International Committee on Radiation Protection (ICRP) methodology. This initiative will include the performance of a technical analysis for public comment concerning the disposal in a near surface facility of any long-lived radionuclide, including uranium. The panel will discuss the current classification framework to determine if the system is working as intended and what, if any, changes should be made to the existing system.

**Panelists include:** **Christopher McKenny**, Branch Chief, Performance Assessment Branch, US NRC; **Mark Gilbertson**, Deputy Assistant Secretary for Site Restoration, US DOE -EM; **Lisa Edwards**, Sr. Program Manager, Nuclear Chemistry, Low Level Waste & Radiation Management Group, EPRI; **William Dornsife**, Executive Vice President, Licensing & Regulatory Affairs, Waste Control Specialists, Inc.; **John T. Greeves**, Senior Regulatory Consultant, Talisman International; **Rusty Lundberg**, Director, Utah Division of Radiation Control and **Thomas Magette**, Managing Director, CP&I, Price, Waterhouse, Coopers LLP.

### Session 73

**10:15 AM - 12:00 PM Room 103AB**

#### **Panel: US DOE Mixed Waste: Addressing Proposals for Dealing with Problematic Waste Streams and Policy Changes Affecting Waste Disposition**

Co-Chairs: **Dick Blauvelt**, Portage, Inc.; **Christine Gelles**, US DOE  
Lead Organizer & Panel Reporter: **Dick Blauvelt**, Portage, Inc.  
Add'l Organizer: **Christine Gelles**, US DOE

The panel will address progress in the disposition of US DOE mixed hazardous/radioactive waste streams. In addition, the panel will examine changes in mixed waste requirements based upon revisions to US DOE Order 435.1, changes in US Title 10 Code of Federal Regulations Part 61 (10CFR61) along with any new requirements associated with the site-wide disposal contract. Accordingly, the panel will address selected institutional/regulatory topics including but not limited to: removal of US EPA conservatively assigned Hazardous Waste Numbers (HWNs); allowances for blending/consolidating wastes and managing Greater Than US NRC Regulated Class C waste (GTCC) – like waste including activated/contaminated fuel debris and hardware not managed as HLW.

**Panelists include:** **John Gilmour**, Director Solid Waste and F Area Ops, Savannah River Nuclear Solutions; **Ken Grumski**, VP Federal Programs, Waste Control Specialists; **Scott Wade**, Asst. Manager EM, US DOE NNSA, Nevada Site Office; **Bruno Zovi**, LLW/MLLW Program Manager, Advanced Mixed Waste Treatment Project, Idaho Treatment Group and **Scott Anderson**, Waste Disposition Manager, UCOR, ETPP Oak Ridge

### Session 74

**8:30 AM - 12:00 PM Room 101C**

#### **Regulatory and Programmatic Issues and Solutions for LLW, ILW, MW, NORM, TENORM & Depleted Uranium**

Co-Chairs: Gabriele Bandt, TÜV NORD EnSys Hannover (Germany); David Eaton, CH2M-WG Idaho, LLC  
Lead Organizer & Paper Reviewer: David Eaton, CH2M-WG Idaho, LLC  
Add'l Organizers: Gabriele Bandt, TÜV NORD EnSys Hannover

- 8:35 An Evaluation of the 2007 Strategic Assessment of the US NRC's Low-Level Waste Regulatory Program - 14433**  
*Janelle Jessie, Melanie Wong, James Kennedy, US NRC*
- 9:00 Continuous Improvements of Analytical Waste Management Activities at the Hanford Site, Mission Support Alliance, Waste Sampling and Characterization Facility Laboratory - 14390**  
*Matt Mills, Melanie Myers, Jonathan Kon, Lori Fritz, Mission Support Alliance*
- 9:25 Adaptive Management Facilitates Remedial Decision-Making in the Face of Uncertainty - 14171**  
*Sidney Garland, Lynn Sims, Restoration Services, Inc.; Mark Peterson, ORNL*
- 9:50 Understanding and Managing the Radiological Issues Associated with the Hydraulic Fracturing for Oil and Gas - 14600**  
*Alejandro Lopez, AMEC Environment and Infrastructure*
- 10:20 Technical Design of the National Disposal Facility at Radiana in Bulgaria - 14291**  
*Thilo von Berlepsch, Enrique Biurrun, DBE Technology GmbH (Germany); Mariano Navarro, ENRESA (Spain); Ira Stefanova, SERAW (Bulgaria); Emiliano Gonzalez Herranz, Westinghouse Electric Spain SA (Spain)*
- 10:45 Recovery and Recycling of Aluminum, Copper, and Precious Metals From Dismantled Weapon Components - 14176**  
*Dwight Stockham, Leroy Duran, Sandia National Laboratories*
- 11:10 Estimation of the Probability of Human Disturbance Using GIS - 14446**  
*Allen Gross, David Esh, US NRC*

## Session 75

8:30 AM - 12:00 PM Room 105C

### Geologic Disposal Phenomenology and R&D

Co-Chairs: **Christine Gelles**, *US DOE*; **Abraham Van Luik**, *US DOE-EM*

Lead Organizer: **Roger Nelson**, *US DOE*

Add'l Organizers: **Gérald Ouzounian**, *Andra (France)*;

**Chuan-Fu Wu**, *ES&H Solutions*

Paper Reviewer: **Abraham Van Luik**, *US DOE-EM*

**8:35 Long-Term Behaviour of Salt Concrete - a Material for Engineered Barriers in Final Repositories in Salt Formations - Development of Reactive Transport Models for Matrix Corrosion and Corrosion on Cracks - 14177**

**Horst-Jürgen Herbert**, *Gesellschaft für Anlagen-und Reaktorsicherheit (Germany)*

**9:25 The Salt Defense Disposal Investigations (SDDI): Current Status and Future Plans - 14486**

**Bruce Robinson**, *Douglas Weaver, Philip Stauffer, Los Alamos National Laboratory; Nancy Buschman, Roger Nelson, US DOE*

**9:50 Alternative Defense Waste Repository Concepts - 14584**

**Joe Carter**, *SRNL*

**10:20 Flume Testing of Surrogate Waste Materials Leading to a Recommendation for the Lower Limit for TAUFAIL - 14172**

**Courtney Herrick**, *Michael Schuhen, Sandia National Laboratories*

**10:45 Assessment of Bentonite Characteristics in KBS3 Method - 14344**

**Markus Olin, Kari Rasilainen**, *VTT Technical Research Centre of Finland; Leena Korkiala-Tanttu, Aalto University; Mia Tiljander, Geological Survey of Finland; Mika Laitinen, Numerola Oy; Pirkko Hölttä, Ritva Serimaa, University of Helsinki; Markku Kataja, University of Jyväskylä (Finland)*

**11:10 The Feasibility of Using the KBS-3 Technology for Disposal of US Department of Energy's Used Nuclear Fuel - 14438**

**Claes Lindberg, Hans Forsström**, *Magnus Holmqvist, SKB International AB; Peter Wikberg, SKB (Sweden); Hitesh Nigam, US DOE*

**11:35 Preliminary Design Concepts for a Deep Borehole Disposal Re-Packaging Facility - 14563**

**Travis Muir**, *University of Illinois - Urbana-Champaign; William Nutt, ANL*

## Session 76

8:30 AM - 12:00 PM Room 106A

### TRU Waste Optimization and Progress

Co-Chairs: **Don Booher**, *DBX Energy Consultants*;

**Kapil Goyal**, *Los Alamos National Laboratory*

Lead Organizer: **Roger Nelson**, *US DOE*

Add'l Organizers: **Don Booher**, *DBX Energy*

*Consultants; Kapil Goyal, LANL*

Paper Reviewer: **Kapil Goyal**, *LANL*

**8:35 The National Transuranic (TRU) Program - 14069**

**J.R. Stroble**, *US DOE*

**9:00 Minimization of Risk and Cost Associated with Transuranic Mixed-Waste Characterization - 14143**

**Steve Kouba**, *URS Professional Solutions LLC; Karen Day, Eric D'Amico, Robert Kehrman, Rick Chavez, URS Corporation; George Basabilvazo, US DOE*

**9:25 Characterization and Certification of Plutonium Isentropic Compression Experiment (Pu-ICE) Containment Vessels for Shipment and Emplacement at the Waste Isolation Pilot Plant (WIPP). LA-UR-13-26085 - 14046**

**Beverly Crawford**, *Kapil Goyal, Los Alamos National Laboratory; Jeff Gluth, Sandia National Laboratories; Tom Morgan, US DOE; Betty Humphrey, Thomas Krause, Weston Solutions, Inc.*

**9:50 Key Factors in Successful Execution of the LANL 3,706 m3 TRU Waste Campaign - 14086**

**Kathryn Johns-Hughes**, *James Steve Clemmons, Daniel Cox, Kenneth Hargis, Los Alamos National Laboratory; David Nickless, US DOE*

**10:20 Newly-Generated, Remote-Handled TRU Characterization and Certification at Sandia National Laboratories/New Mexico (SAND # 2013-6745A) - 14199**

**Betty Humphrey**, *Weston Solutions, Inc.; Michael Spoerner, Warren Strong, Randell Salyer, Richard Aguilar, Sandia National Laboratories; Todd Erenstein, Tetra Tech HEI*

**10:45 ISOCS Waste Measurement Applications at the Oak Ridge National Laboratory - 14138**

**Joseph Wachter**, *Sean Stanfield, Canberra Industries Inc; Kevin Meyer, Canberra Industries; Robert Ceo, Canberra Industries, Inc*

**11:10 TRU Waste Processing Center Achievements and Process Improvements in Processing Transuranic Waste** - 14278  
*Ronald Gentry, EnergX, LLC*

**11:35 Nuclear Footprint Reduction at Argonne National Laboratory - Out With The Old (Material), In With The New (Mission)** - 14665  
*Daniel Pancake, ANTECH / Argonne National Laboratory; Cynthia Rock, Argonne National Laboratory; Dale Dietzel, Andrew Gabel, US DOE*

### Session 77

**8:30 AM - 12:00 PM Room 102A**

## An Update on the Fukushima Recovery Project & Its Global Impact

Co-Chairs: **Angie Jones**, AMEC; **David Wallace**, Parsons Brinckerhoff  
Lead Organizer: **Angie Jones**, AMEC  
Add'l Organizer & Paper Reviewer: **David Wallace**, Parsons Brinckerhoff

- 8:35 Effects of Fukushima on Global Nuclear Development** - 14621  
*Charles McCombie, MCM Consulting; Arius Association (Switzerland)*
- 9:00 Impermeable Graphite Matrix IGM for the Conditioning of Spent Absorbers at Fukushima** - 14186  
*Georg Bräehler, NUKEM Technologies GmbH; Karl-Heinz Grosse, ALD (Germany); Eric Marsat, FNAG SAS (France); Walter Mueller, FNAG ZU (Germany)*
- 9:25 Development of a Reactive Transport Model for the Optimization of Ion Specific Media Used at the Fukushima Daiichi Nuclear Power Plant** - 14579  
*Joshua Mertz, Mark Denton, Kurion, Inc.; Brian Powell, Lawrence Murdoch, Clemson University*
- 9:50 Frozen Soil Barrier Technology- Facts about the Oak Ridge National Laboratory Barrier** - 14554  
*Edward Yarmak, Arctic Foundations, Inc.; Elizabeth Phillips, US DOE*
- 10:20 Severe Accident Management Hierarchy and Resilience Architecture Post Fukushima** - 14510  
*Anne Woolley, DBD Limited (United Kingdom)*
- 10:45 Fukushima Water Treatment Update** - 14257  
*James Braun, Avantech, Inc.*

**11:10 Absorbers for Removal of Sr-90 from Sea Water at Fukushima Site** - 14184  
*Georg Bräehler, Alexander Zulauf, NUKEM Technologies GmbH (Germany); Valentin Avramenko, Tatyana Sokolnitskaya, Russian Academy of Sciences (Russian Federation)*

**11:35 Lessons Learned from the Fukushima Daiichi Nuclear Accident – A Discussion from Neutral Point of View** - 14384  
*Ming Zhang, Geological Survey of Japan, AIST (Japan)*

### Session 78

**8:30 AM - 12:00 PM Room 101B**

## Nuclear Power Plant Onsite SNF/UNF Storage

Co-Chairs: **Mark Lewis**, EnergySolutions; **Andreas Roth**, AMR German Products & Services GmbH (Germany)  
Lead Organizer & Paper Reviewer: **Wolfgang Steinwarz**, Siempelkamp Nukleartechnik GmbH (Germany)  
Add'l Organizers: **Mark Lewis**, EnergySolutions

- 8:35 Regulation of Waste Streams from Small Modular Reactors and Advanced Reactors** - 14061  
*Anna Bradford, US NRC*
- 9:00 Lessons Learned after 20 Years of Experience with the 10 CFR 72 General License Process** - 14019  
*Brian Gutherman, Gutherman Technical Services*
- 9:25 Containers for Storage and Transport of Spent Fuel and Waste from the Operations, Decommissioning and Dismantling of Nuclear Power Stations** - 14163  
*Allen Jack, Juergen Skrzyppek, Joerg Viermann, GNS mbH; Wolfgang Steinwarz, Siempelkamp Nukleartechnik GmbH (Germany)*
- 9:50 Technical Feasibility of Storing 1 Month Old SNF in an Onsite Irradiation Facility** - 14233  
*Russell Goff, G-DeMption*
- 10:20 Situation of Interim Storage of Spent Nuclear Fuel (SNF) and Highly Active Waste (HAW) in Germany** - 14249  
*Christoph Gastl, Federal Office of Radiation Protection (Germany)*
- 10:45 Integrated Data and Analysis System for Commercial Used Nuclear Fuel Safety Assessments** - 14657  
*John Scaglione, Joshua Peterson, Kaushik Banerjee, Kevin Robb, Robert LeFebvre, Oak Ridge National Laboratory*



**11:10 Spent Fuel Safety Analyses at Armenian NPP** - 14329  
**Gagik Grigoryan**, State Engineering University of Armenia; Nuclear and Radiation Safety Centre; Armen Amirjanyan, Albert Hovhannisyan, Yeghishe Gondakyan, Nuclear and Radiation Safety Centre (Armenia)

### Session 79

**8:30 AM - 12:00 PM Room 106B**

## ER Challenges - Alternative Approaches to Achieving End State

Co-Chairs: **Briant Charboneau**, US DOE; **Moses Jaraysi**, CH2M HILL PRC  
Lead Organizer & Paper Reviewer: **Moses Jaraysi**, CH2M HILL PRC  
Add'l Organizers: **Peter Booth**, Hylton Environmental (United Kingdom); **Kurt Gerdes**, US DOE

- 8:35 An Integrated Endpoint Approach for Complex Sites** - 14599  
**Michael Truex**, Pacific Northwest National Laboratory
- 9:00 Innovative Strategy for Long Term Monitoring of Metal and Radionuclide Plumes** - 14380  
**Carol Eddy-Dilek**, Margaret Millings, Brian Looney, Miles Denham, SRNL
- 9:25 Hanford Site River Corridor Cleanup – Effectiveness of Interim Actions and Transition to Final Actions** - 14468  
**Jeff Lerch**, Washington Closure Hanford; **Laura Cusack**, CH2M HILL PRC; **James Hansen**, US DOE
- 9:50 Remediation of Contaminated Groundwater at Complex Sites: Overview of Alternative Endpoints and Approaches** - 14400  
**Rula Deeb**, Geosyntec Consultants; **Elisabeth Hawley**, ARCADIS US, Inc.
- 10:20 Systems-Based Framework for Remediation Endpoints** - 14355  
**Michelle (Hope) Lee**, Michael Truex, Dawn Wellman, Amoret Bunn, Mark Freshley, PNNL; **Danny Katzman**, Velimir Vesselinov, Los Alamos National Laboratory; **Eric Pierce**, Oak Ridge National Laboratory; **Miles Denham**, **Carol Eddy-Dilek**, Savannah River National Laboratory; **John Morse**, **Michael Thompson**, **Kurt Gerdes**, **Skip Chamberlain**, US DOE
- 10:45 Engineered Media for Removal of Fission Products from Aqueous Streams** - 14580  
**Abigail Holmquist**, UOP - A Honeywell Company

**11:10 Results of Laboratory Microbial Testing for Enhancing Bioremediation of Petroleum-Contaminated Soils at the Hanford Site's 100-N Area** - 14592  
**Wendy Thompson**, Washington Closure Hanford

**11:35 Evapotranspiration and Geochemical Controls on Groundwater Plumes at Arid Sites: Toward Innovative Alternate End-States for Uranium Processing and Tailings Facilities** - 14631  
**Brian Looney**, Miles Denham, Carol Eddy-Dilek, Margaret Millings, Savannah River National Laboratory; **Mark Kautsky**, US DOE

### Session 80

**8:30 AM - 12:00 PM Room 106C**

## Groundwater Remediation Projects

- Co-Chairs: **Briant Charboneau**, US DOE; **Bob Popielarczyk**, CH2M HILL PRC  
Lead Organizer: **John Kristofzski**, CH2M HILL, Inc.  
Add'l Organizers: **Kurt Gerdes**, US DOE; **Bob Popielarczyk**, CH2M HILL PRC  
Paper Reviewer: **Latrincy Bates**, US DOE
- 8:35 Geophysical Logging to Assess Annular Seals in Groundwater Monitoring Wells at the Hanford Site** - 14536  
**Rick McCain**, Paul Henwood, Arron Pope, S.M. Stoller Corporation
- 9:00 In-Situ Precipitation of Radionuclides in Groundwater at US DOE Savannah River Site** - 14559  
**Chris Lutes**, Angela Frizzell, Jeff Gillow, Jeff Beckner, ARCADIS US, Inc.
- 9:25 Genome-Enabled Systems Approach to Predict Immobilization of Technetium in the Subsurface** - 14351  
**Michelle (Hope) Lee**, Danielle Saunders, Brady Lee, Pacific Northwest National Laboratory
- 9:50 Evaluating the Potential for Microbial Iodine Immobilization: Humic Acid Bioremediation** - 14354  
**Brady Lee**, Michelle (Hope) Lee, Danielle Saunders, Kent Parker, PNNL
- 10:20 The Importance of Micronutrients to Biological Treatment, 200 West Pump and Treat, Hanford Site, Richland, WA** - 14021  
**John Morse**, US DOE; **Mark Carlson**, **Ken Martins**, **Josh Boltz**, CH2M HILL; **Sally Simmons**, **Mark Byrnes**, CH2M HILL PRC; **Adrienne Menniti**, Clean Water Services; **Michelle (Hope) Lee**, Pacific Northwest National Laboratory

- 10:45 Identification of Major Risk Drivers and Contaminants of Potential Concern for a Complex Groundwater Aquifer** - 14350  
*Alaa Aly, Donna Morgans, INTERA*
- 11:10 Efficiencies and Optimization of Weak Based Anion IX Resin for Groundwater Hexavalent Chromium Removal at Hanford** - 14202  
*Dean Neshem, Charles Miller, Kris Ivarson, CH2M HILL PRC; Peter Meyers, ResinTech; James Hanson, Naomi Bland, US DOE*
- 11:35 Project Status of the Port Hope Area Initiative: Application of the Adaptive Management Concept as Theory Becomes Reality** - 14340  
*G. Glenn Case, Walter van Veen, David W. Smith, Atomic Energy of Canada Limited; Dave Lawrence, Public Works Government Services Canada (Canada)*

## Poster Session 81A

**8:30 AM - 12:00 PM 1st Floor Foyer**

### Topic A: D&D Posters: International Decommissioning Experience

Co-Chairs: **Jas Devgun**, Sargent & Lundy, LLC; **Hans-Juergen Steinmetz**, Forschungszentrum Juelich GmbH (Germany)  
Lead Organizer & Paper Reviewer: **Jas Devgun**, Sargent & Lundy, LLC

- A1. Decommissioning of Underground Storage Tanks of Liquid Radioactive Waste at the A1 NPP in Slovakia** - 14252  
*Kamil Kravarik, Zuzana Holicka, Michal Pisca, Martin Listjak, Miroslav Baca, Anton Pekar, Marian Stubna, VUJE, Inc. (Slovakia)*
- A2. Licensing Process For Decommissioning Low Flux Reactor Petten** - 14490  
*Renate de Vos, Karlijn Van der Wagt - de Groot, Michel Kok, NRG (Netherlands)*
- A3. Benefits of a Dedicated Decommissioning Team for the B300 Project at Whiteshell Laboratories** - 14368  
*Brian Wilcox, Craig Michaluk, Atomic Energy of Canada Limited (Canada)*
- A4. Campoverde Decommissioning of Former Controlsonic Deposit** - 14036  
*Giovanni Zorzoli, Campoverde SRL (Italy)*
- A5. Radioactive Waste Management for the Decommissioning of Kori Unit 1 in South Korea** - 14615  
*Anthony Shadrack, KEPCO International Nuclear Graduate School (Republic of Korea)*
- A6. New Method for the Decontamination of Labyrinth-Seals of Control Rod Drives (CRD)** - 14167  
*Pál Baradlai, András Kurucz, Ottó Oldal, Norbert Kósa, Gábor Patek, MVM Paks Nuclear Power Plant Ltd; György Pátzay, Budapest University of Technology and Economics (Hungary); Zoltán László, Károly Nyitrai, Sándor Szabó, Márk Petrik, Hepenix Ltd.; János Schunk, MVM Paks II. Ltd. (Hungary)*
- A7. Experience from Fukushima 1F-3 Spent Fuel Removal System Project** - 14573  
*John Hubball, Westinghouse Electric Company*

### Topic B: D&D Posters: Nuclear Power Plant Decommissioning

Co-Chairs: **Michelle Claggett**, Project Enhancement Corporation; **Jas Devgun**, Sargent & Lundy, LLC  
Lead Organizer & Paper Reviewer: **Michelle Claggett**, Project Enhancement Corporation

- B1. Sorption (Kd) Measurements in Support of Dose Assessments for Zion Nuclear Station Decommissioning** - 14228  
*Sung Paal Yim, Korea Atomic Energy Research Institute (Republic of Korea); Terry Sullivan, Laurence Milian, Brookhaven National Laboratory; Robert Decker, Bruce Mann, ZionSolutions LLC*
- B2. Dismantling and Release of Large Metallic Components at the GNS Premises in Duisburg on the Example of a CASTOR S1 Container** - 14165  
*Christian Gutland, Frank Ambos, sat. Kerntechnik GmbH; Hans-Jürgen Blenski, Steffen Oehmigen, GNS Gesellschaft für Nuklear-Service mbH (Germany)*
- B3. Kazakhstan: Treatment and Safe Disposal of Liquid Radioactive Waste from the BN-350 Reactor Unit at the LRW Processing Facility** - 14016  
*Dennis Kelley, Pacific Nuclear Solutions; Artem Gelis, Argonne National Laboratory; Igor Yakovlev, Anatoliy Ivanov, Igor Yakovlev, MAEC-Kazatomprom LLP; Igor Yakovlev, Anatoliy Ivanov, Igor Yakovlev, MAEC-Kazatomprom LLP; Anatoliy Galkin, Alexander Klepikov, Nuclear Technology Safety Center (Republic of Kazakhstan)*
- B4. The Analysis of the Process of Dismantling and Segmentation of Steam Generator from the Perspective of Internal and External Exposure** - 14323  
*Martin Hornacek, Slovak University of Technology in Bratislava, Faculty of Electrical Engineering and Information Technology (Slovakia); Vladimir Necas, Slovak University of Technology in Bratislava (Slovak Republic)*

- B5. Cutting Performance of Remote Fiber Laser Cutting System for Dismantling HLW Glass Melter** - 14093  
**Takashi Mitsui**, Noriaki Miura, Hiroshi Kinugawa, IHI Corporation; Katsura Oowaki, Isao Kawaguchi, IHI Inspection & Instrumentation Co., Ltd; Yasuhiko Miura, Tooru Ino, Japan Nuclear Fuel Limited (Japan)
- B6. Radiation Impact During the Melting of Radioactive Scrap Metal Arisen from the Decommissioning of Nuclear Facilities** - 14284  
**Andrej Slimák**, Institute of Nuclear and Physical Engineering, Slovak University of Technology in Bratislava (Slovakia); Vladimir Necas, Slovak University of Technology in Bratislava (Slovak Republic)
- B7. Application of the Ultrasonic Technologies for Radioactive Waste Decontamination and NPP Service Water Disinfection** - 14127  
**Nikolay Lebedev**, Alexandra Plus Ltd.; Albert Vasiliev, Victor Yurmanov, Gennadi Dubinin, JSC NIKIET; Oleg Lebedev, Novotech-ECO Ltd.; Dmitry Adamovich, Denis Fedorov, Alexander Savkin, SIA Radon (Russian Federation)
- B8. Operational Experience with a Robotic Arm for Wet Waste Retrieval at Trawsfynydd Nuclear Power Plant** - 14173  
**Alan Smith**, Magnox Ltd (United Kingdom)

### **Topic C: D&D Posters: D&D Technologies**

Co-Chairs: **Jas Devgun**, Sargent & Lundy, LLC; **Charles Negin**, Project Enhancement Corporation  
 Lead Organizer: **Jas Devgun**, Sargent & Lundy, LLC  
 Paper Reviewer: **Charles Negin**, Project Enhancement Corporation

- C1. The Preparation for the Clearance System and Its Operational Issues in FUGEN** - 14055  
**Hideki Kutsuna**, Masanori Izumi, Japan Atomic Energy Agency (Japan)
- C2. Removing of Equipment of Loop Facilities and Preparation for Dismantling of Core of MR Reactor** - 14083  
**Alexander Chesnokov**, Oleg Ivanov, Vyacheslav Kolyadin, Alexey Lemus, Vitaly Pavlenko, Sergey Semenov, Sergey Fadin, Anatoly Shisha, National Research Centre - Kurchatov Institute (Russia)
- C3. Ultra-Light Gamma-Camera for Security and Emergency Situation** - 14066  
 Oleg Ivanov, Ilya Semin, Victor Potapov, Vyacheslav Stepanov, **Alexey Stepanov**, National Research Centre - Kurchatov Institute (Russia)
- C4. 3D Scanning Technology for Large-sized Radioactive Metal Wastes from Decommissioning Nuclear Power Plant Using**

**3D-Scanner** - 14159

**Arim Lee**, Joo Hyun Moon, Chan Hee Park, Rinah Kim, Jung Min Lee, Dongguk University (Republic of Korea)

- C5. Determination of Components of a Fuel Matrix in Water and in Bottom Slimes in the MR Reactor Ponds in NRC "Kurchatov Institute"** - 14038  
**Iurii Simirskii**, National Research Centre - Kurchatov Institute; Alexey Stepanov, Ilya Semin, Anatoly Volkovich, National Research Centre - Kurchatov Institute (Russian Federation)

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**March 5, Wednesday PM**

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### **Session 82**

**1:30 PM - 5:00 PM**      **Room 102BC**

### **Panel: US DOE Featured Site: Los Alamos National Laboratory**

Co-Chairs: **Paul Henry**, Los Alamos National Laboratory; **Jeffrey Mousseau**, Bechtel BWXT Idaho  
 Lead Organizer & Panel Reporter: **Susan Stiger**, Bechtel National, Inc.  
 Add'l Organizer: **Jeffrey Mousseau**, Bechtel BWXT Idaho

This session focuses on the Los Alamos National Laboratory (LANL), a major US DOE National Nuclear Security Administration (NNSA) site located in Los Alamos, NM. The session will showcase recent progress, efforts to overcome challenges, and highlights in planned radioactive waste management, waste disposition, environmental remediation, D&D and water stewardship. It will include both technical presentations and panel discussions.

Technical presentations include:

- Overview 3,706 Cubic Meter Transuranic Waste Campaign, **K. Johns Hughes**, TRU Waste Program Director, LANL
- Future Cleanup Work at Los Alamos National Laboratory, **D. McInroy**, Program Director, Environmental Corrective Actions, LANL
- Innovative Technologies and Practices that Stimulated Success on the 3,706 Cubic Meter TRU Waste Campaign, **M. Romero**, Senior Project Manager, LANL
- Overview and Applications of the Electronic Process Model of the 3,706 Cubic Meter Campaign, **S. Clemons**, Deputy Program Director, LANL

**Panelists include: Jeff Mousseau**, Associate Director, Environmental Programs, LANL; **Ryan Flynn**, Secretary, New Mexico Environment Department; **Christine Gelles**, Associate Deputy Assistant Secretary, Waste Management, US DOE and representatives from the US DOE Idaho National Laboratory and Waste Control Specialists.

### Session 83

**1:30 PM - 3:10 PM Room 104AB**

#### **Panel: Risk & Dose Analysis for Decommissioning of NPPs and Complex Material Facilities**

Co-Chairs: **Rateb Abu Eid**, US NRC; **Patrick O'Sullivan**, International Atomic Energy Agency (Austria)

Lead Organizer & Panel Reporter: **Rateb Abu Eid**, US NRC

Add'l Organizers: **Patrick O'Sullivan**, IAEA (Austria)

This panel session focuses on risk-dose criteria used in national and international decommissioning and updated standards, methods, data, and software used to demonstrate compliance with decommissioning or site release criteria. The panel will also provide illustrative examples for actual Nuclear Power Plants (NPPs) and US Complex facilities.

**Panelists include: Christopher McKenny**, Branch Chief, Performance Assessment Branch, US NRC; **Richard Reid**, Senior Project Manager, Electric Power Research Institute (EPRI); **Roger Seitz**, Senior Advisory Scientist, Savannah River National Lab and **Manuel Rodriguez**, Director of Decommissioning - NPP Site, ENRESA (Spain).

### Session 84

**3:15 PM - 5:00 PM Room 104AB**

#### **Innovations to Nuclear D&D: Progress in Fukushima**

Co-Chairs: **Paul Breidt**, Pacific Northwest National Laboratory; **Kazuhiro Suzuki**, Nuclear Fuel Transport Co. Ltd. (Japan)

Lead Organizer: **Jeannette Hyatt**, Savannah River National Laboratory

Add'l Organizers: **Kurt Gerdes**, US DOE; **Jeff Griffin**, Savannah River National Laboratory; **Wayne Johnson**, PNNL

Panel Reporter: **Andrew Fellingner**, Savannah River National Laboratory

This panel will focus on specific activities related to the recovery efforts progress and challenges posed by D&D at the Fukushima site. Efforts under way as well as technical exchange related to deployment of classical clean up strategies risk management and deployment of innovative approaches to contamination control will be discussed.

**Panelists include: Andrew Szilagyi**, D&D and Facility Engineering Program Manager, US DOE; **Kazuhiro Suzuki**, Executive Director, International Research Institute For Nuclear Decommissioning (Japan); **Mark Triplett**, Embassy Science Fellow to Japan, 2013, Pacific Northwest National Laboratory; **Sang Don Lee**, US Embassy Science Fellow to Japan 2013, US EPA and **Jeff Griffin**, Associate Laboratory Director, Savannah River National Laboratory.

### Session 85

**1:30 PM - 3:10 PM Room 105A**

#### **Panel: Informed Performance Based Decision Making**

Co-Chairs: **Kimberly Brinkley**, SC Dept of Health & Environmental Control; **Linda Suttora**, US DOE

Lead Organizer: **Kurt Gerdes**, US DOE

Add'l Organizers: **Jeannette Hyatt**, Savannah River National Laboratory; **Michelle (Hope) Lee**, Pacific Northwest National Laboratory; **Bill Levitan**, US DOE

Panel Reporter: **Dawn Wellman**, Pacific Northwest National Laboratory

This panel session will present the issues related to a holistic approach, methods of site wide evaluation of risk and efforts to develop a risk informed approach to clean-up to meet regulatory requirements and statutes.

The competing national priorities require a closer look at clean-up plans across the US DOE complex which in turn has presented an opportunity to re-evaluate methods of remediation. A holistic approach that includes looking at risk factors across a site and mitigation of those risks is being explored. Current approaches have addressed risk on an operable unit (OU) by operable unit (OU) basis with some analysis of impacts to adjacent OUs but not across an entire site.

The panelists include experts from industry, academia and government with extensive backgrounds in environmental clean-up. They will present current National Research Council reports and findings as well as proposed methods for site reviews. This panel will be followed by Panel 86 that will present tools being

developed to better model and evaluate potential scenarios for clean-up.

**Panelists include:** **Rula Deeb**, *Principal, Geosyntec Consultants and ITRC Team Lead*; **Carol Eddy-Dilek**, *Scientist, SRNL*; **Mike Kavanaugh**, *Principal, Geosyntec Consultants*; **Deb Morefield**, *Environmental Restoration Manager, Office of the Deputy Under Secretary of Defense, DoD*; **Chuck Newell**, *Vice President, GSI Environmental Inc.* and **Mike Truex**, *Scientist, PNNL*.

### Session 86

**3:15 PM - 5:00 PM Room 105AB**

#### **Panel: Recent Developments and Trends in Integrated Risk Assessment Methods, Tools, and Decision Analysis Support**

Co-Chairs: **Kim Auclair**, *KD Auclair & Associates, LLC*; **Kurt Gerdes**, *US DOE*  
Lead Organizer: **Kurt Gerdes**, *US DOE*  
Add'l Organizers: **Bill Levitan**, *US DOE*; *Julia Whitworth, International Atomic Energy Agency (Austria)*; **Ming Zhu**, *US DOE*  
Panel Reporter: **Skip Chamberlain**, *US DOE*

This panel session will build on the previous session 85 on Informed Based Decision Making. The panelists will discuss the approaches, tools and clean-up systems being developed for modeling of alternative scenarios that can be used by site contractors in their efforts to complete clean-up and closure.

Current US DOE sites requiring environmental clean-up are defined as the most technically challenging, highest risk and largest life cycle cost sites in the federal inventory. As such they require the most sophisticated tools to ensure clean-ups meet regulatory requirements while safe guarding the public and the individuals who are performing the clean-up work. These sites require new tools and approaches to ensure successful clean-up in difficult environments while keeping costs to a manageable level. These tools and approaches include risk assessment, decision analysis and scenario evaluation through the use of new high performance computing platforms. These analyses tools will assist in discussion with regulators and stakeholders by providing alternative scenarios with related life cycle costs to assist with discussions and negotiations.

**Panelists include:** **Paul Black**, *Chief Executive Officer, Neptune, Inc*; **Mark Gilbertson**, *Deputy Assistant Secretary for Site Restoration, US DOE*; **Jennifer Heimberg**, *Senior Program Officer, Nuclear*

*and Radiation Studies Board (NRSB), The National Academies and David Kosson, Principal Investigator, Consortium for Risk Evaluation with Stakeholder Participation (CRESP), Vanderbilt University.*

### Session 87

**1:30 PM - 5:00 PM Room 106A**

#### **Technical Innovations in Environmental Remediation and Site Closure**

Co-Chairs: **Joy Shoemake**, *Jacobs Engineering*; **Dale Bignell**, *PORTAGE*  
Lead Organizer: **Del Baird**, *Pro2Serve*  
Add'l Organizers: **Dale Bignell**, *PORTAGE*; **Leo van Velzen**, *NRG-Arnhem (Netherlands)*  
Paper Reviewer: **Dale Bignell**, *PORTAGE*

- 1:35 Monitoring the Contamination in the Area Contaminated by the Fukushima Daiichi NPP Accident and Sorting of the Contaminated Soil - 14455**  
**Marc Messalier**, *Pascal Prud'Homme, Maxime Bourasseau, AREVA (France)*
- 2:00 Research to Support Development of Technologies and Approaches for Remediation of Mercury Contaminated Soils - 14435**  
**Mikhail Khokhlov**, *Evgenii Legin, Valery Romanovsky, Igor Smirnov, Khlopin Radium Institute (Russian Federation)*; **Eric Pierce**, *Oak Ridge National Laboratory*
- 2:25 The Art & Power of Visual Data Imaging - 14622**  
**Jeffrey Lively**, *AMEC*
- 2:50 Pore Water Extraction Test Near SX Tank Farm at the Hanford Site, Washington, USA - 14168**  
**Danny Parker**, *Melissa Holm, Susan Eberlein, Harold Sydnor, Cynthia Tabor, Washington River Protection Solutions*; **Colin Henderson**, *Columbia Environmental and Engineering Services*; **R. Douglas Hildebrand**, *US DOE*; **Michelle Hendrickson**, *Maria Skorska, Washington State Department of Ecology*
- 3:20 Strategy for Demonstration of Attainment of Groundwater Cleanup Levels - 14618**  
**Alaa Aly**, *Trevor Budge, INTERA*
- 3:45 Rate of Uranium Release from Calcium Meta-Autunite: Effect of Bicarbonate Solutions on the Dissolution - 14218**  
**Ravi Krishna Prasanth Gudavalli**, **Yelena Katsenovich**, *Leonel Lagos, Florida International University*; **Dawn Wellman**, *PNNL*

**4:10 Web-Based Tool Identifies and Quantifies Potential Cost Savings Measures at the Hanford Site** - 14366  
*Jon Peschong, Briant Charboneau, US DOE; Marisa Renevitz, Longenecker & Associates, supporting Mission Support Alliance at US DOE Richland Operations Office*

## Session 88

**1:30 PM - 5:00 PM Room 106B**

### The Aging US DOE Infrastructure-Critical Investments/Alternatives to Get to the Finish Line

Co-Chairs: **Andrew Szilagyi**, *US DOE*; Robert Vellinger, *TerranearPMC, LLC*  
Lead Organizer: **Karen Flynn**, *US DOE*  
Add'l Organizer: **Andrew Szilagyi**, *US DOE*  
Paper Reviewer: **Robert Vellinger**, *TerranearPMC*

- 1:35 Finishing an Era: Accelerated Decontamination and Decommissioning at the K-25 Building, East Tennessee Technology Park, Oak Ridge, TN** - 14141  
*Steven Dahlgren, URS | CH2M Oak Ridge LLC*
- 2:00 Supporting the Largest D&D Project with Innovative Waste Management Approaches Oak Ridge, TN** - 14628  
*Scott Anderson, Mike Ferrari, Roland Weiskettel, UCOR; John Wrapp, URS | CH2M Oak Ridge LLC*
- 2:25 Administrative and Engineering Controls for the Operation of Ventilation Systems for Underground Radioactive Waste Storage Tanks** - 14197  
*Bruce Wiersma, SRNL; Adam Hansen, Savannah River Remediation, LLC*
- 2:50 Translating the Facilities Information Management System (FIMS) Data into Risk Management Criteria and into a Risk Ranking Process for Disposition Projects** - 14135  
*Richard Nevarez, NNSA, US DOE*
- 3:20 NNSA's Risk-Based Nuclear Security Enterprise-wide Facility Disposition Program** - 14108  
*Deborah Couchman-Griswold, NNSA, US DOE; Jefferson Underwood, US DOE*
- 3:45 Structured Planning and Preparation Leads to Safe Open-Air Demolition of Contaminated Facility** - 14520  
*Catherine Bohan, US DOE - West Valley Demonstration Project; Cynthia Dayton, CH2M HILL Babcock Wilcox LLC; Thomas Dogal, Kirk Winterholler, CH2MHill Babcock & Wilcox, LLC*

- 4:10 Understanding Mechanisms of Radiological Contamination** - 14054  
*Rick Demmer, Idaho National Laboratory; Ryan James, Battelle; John Drake, US EPA*
- 4:35 Value Engineering Study Yields Immediate Results for Hanford Plutonium Finishing Plant** - 14429  
*Mike Swartz, CH2M HILL PRC*

## Session 89

**1:30 PM Room 106C**

### Management of Nuclear Power Plant Dry Waste

Co-Chairs: **Mark Lewis**, *EnergySolutions*; **Wolfgang Steinwarz**, *Siempelkamp Nukleartechnik GmbH (Germany)*  
Lead Organizer & Paper Reviewer: **Mark Lewis**, *EnergySolutions*  
Add'l Organizers: **Wolfgang Steinwarz**, *Siempelkamp Nukleartechnik GmbH*

- 1. Building Context for Radioactive Waste Characterization** - 14040  
*Thomas Kalinowski, David James, DW James Consulting, LLC*
- 2. Retrieval and Conditioning of Powdery Waste: Investigations Carried out in a Storage Pit to Consolidate Input Data Prior to Conditioning** - 14207  
*Valérie Thiebaut, Anne Courtadon, Olivier Dugne, Frédéric Rascalou, CEA; Jean Michel Fulconis, AREVA (France)*
- 3. Comparative Life Cycle Assessment (LCA) of Protective Garments: Reusable vs. Disposable in Radioactive Material Applications** - 14634  
*John Jewell, Margaret Wildernauer, PE-International Inc.*

## Session 90

After Session 89

Room 106C

### Management of Nuclear Power Plant Liquid and Wet Waste

Co-Chairs: **Coleman Miller**, *Pacific Gas & Electric*;  
**Andreas Roth**, *AMR German Products & Services GmbH* (Germany)  
Lead Organizer: **Coleman Miller**, *Pacific Gas & Electric*  
Add'l Organizer: **Mark Lewis**, *EnergySolutions*  
Paper Reviewer: **Esko Tusa**, *Fortum Power and Heat Oy* (Finland)

- 1. 150 GPM Solids Removal System, EnergySolutions SRS-150 XUF™ Grand Gulf Operating Experience Update** - 14454  
**Greg Broda**, *Kenneth Johnson, EnergySolutions*
- 2. New Facilities to Reduce Releases from Swedish BWRs** - 14009  
**Niklas Bergh**, **Gunnar Hedin**, *Westinghouse Electric Sweden AB*; **Ulf Borgvald**, *Forsmarks Kraftgrupp AB*; **Jörgen Eriksson**, *Oskarshamns Kraftgrupp AB* (Sweden)
- 3. Selective Separation of Radionuclides from NPP Evaporator Bottom Residue** - 14091  
**György Pátzay**, *Emil Csonka, Csilla Tonkó, Budapest University of Technology and Economics*; **Gábor Patek**, *MVM Paks Nuclear Power Plant Ltd*; **János Otterbein**, **Ferenc Feil**, *Paks Nuclear Power Plant Ltd* (Hungary)
- 4. Testing of New Antimony Selective Media SbTreat at Loviisa NPP, Finland** - 14241  
**Risto Harjula**, *Risto Koivula, University of Helsinki*; **Esko Tusa**, *Pasi Kelokaski, Fortum Power and Heat Oy*; **Roger Kvarnström**, **Ilkka Ropponen**, **Laura Togneri**, *Fortum Power and Heat, Loviisa NPP* (Finland)

## Session 91

1:30 PM - 5:00 PM

Room 102A

### Operating Experience in the Treatment and Storage of LLW, ILW, MW, NORM & TENORM

Co-Chairs: **Kapila Fernando**, *ANSTO* (Australia);  
**Christine Langton**, *Savannah River Nat'l Laboratory*  
Lead Organizer & Paper Reviewer: **Kapila Fernando**, *ANSTO*  
Add'l Organizers: **Gabriele Bandt**, *TÜV NORD EnSys Hannover* (Germany); **Christine Langton**, *Savannah River National Laboratory*

- 1:35 Embedding a Strategy - Changing a Culture** - 14542  
**Becky Ruddy**, **Dennis Thompson**, **Cath Giel**, *Low Level Waste Repository Ltd* (United Kingdom)
- 2:00 Implementation and Performance Testing of a Sensitive Bulk Laundry Monitor for Use in Nuclear Power Stations** - 14004  
**Marc Looman**, **John Mason**, *ANTECH* (United Kingdom); **Erik Lindberg**, **Tom Donohoue**, **Richard DelPizzo**, **Ray Martin**, *ANTECH Corporation*
- 2:25 AREVA Experiences in Cementation Technologies to Immobilize Radioactive Waste** - 14457  
**Frederic Chambon**, *AREVA Federal Services, LLC*; **Nathalie Segond**, *AREVA NC* (France); **Damien Avril**, *AREVA NP* (France); **Michael Blase**, *AREVA NP GmbH* (Germany)
- 2:50 Immobilization of Liquid Organic and Aqueous Radioactive Waste Decommissioning in Porous Cement Matrix** - 14405  
**Andrey Varlakov**, **Leonid Sukhanov**, **A. A. Bochvar** *Research Institute*; **Aleksandr Germanov**, **A.A. Bochvar** *Research Institute* (Russian Federation)
- 3:20 Comparison of Depth Discrete Oxidation Front Results and Reduction Capacity Measurements for Cementitious Waste Forms** - 14330  
**Christine Langton**, **Donald Miller**, **Rick Minichan**, **Philip Almond**, **David Healy**, *Savannah River National Laboratory*; **David Stefanko**, *Savannah River Nuclear Solutions*
- 3:45 European, Transboundary Projects for Transport, Treatment and Recycling of Large Retired NPP Components in Studsvik** - 14365  
**Gregor Krause**, *Studsvik* (Germany); **Arne Larsson**, *Studsvik Nuclear AB* (Sweden)
- 4:10 Inventory of Low and Intermediate Level Waste (LILW) from the Operation & Maintenance of Nuclear Power Plants (NPPs) in Korea** - 14616  
**Anthony Shadrack**, *KEPCO International Nuclear Graduate School* (Republic of Korea)

## Session 92

1:30 PM - 3:10 PM

Room 103AB

### Panel: UK/USA Partnering Across the Pond - Accomplishments and Lessons Learned

Co-Chairs: **Ana Han**, US DOE; **John Mathieson**, UK NDA (United Kingdom)

Lead Organizer & Panel Reporter: **Angie Jones**, AMEC

Add'l Organizers: **Ana Han**, US DOE; **Graham Jonsson**, UK NDA (United Kingdom)

This panel will build upon the WM2011 panel that presented progress on US DOE/NDA bilateral agreement. Representatives from US DOE and NDA will present the overall accomplishments under this Government to Government agreement and its proposed future direction. There will be presentations on the projects by both the UK and US that will provide insight into the progress that the agreement has made by highlighting key successes and areas for improvement. Projects including orphan waste disposition and waste treatment project improvements. The proposed schedule;

- **Ana Han/John Mathieson** - Overview of panel and supporting comments
- **Laurie Judd** - Update on bilateral activities
- **Myrian Wood** - NNL bilateral activities
- **Graham Jonsson** - NDA view of the value of exchange visits
- **Dave Moody** - US DOE view of the value of exchange visits
- **Jack Devine** - Progress on tech transfer from US & UK

**Panelists include:** **Ana Han**, International Programs, US DOE- EM; **John Mathieson**, Head of International Relations, NDA (United Kingdom); **Laurie Judd**, Vice President of Government Programs, NuVision Engineering, Inc.; **Myrian Wood**, Director, WM & Decommissioning, National Nuclear Lab (United Kingdom); **Graham Jonsson**, National Programme Delivery Manager, NDA (United Kingdom); **Dave Moody**, Savannah River Site Operation Manager, US DOE and **Jack Devine**, Chief Decommissioning Officer, Sellafield, Ltd. (United Kingdom).

## Session 93

1:30 PM - 5:00 PM

Room 105C

### Storage of Spent/Used Nuclear Fuel and Solid HLW

Co-Chairs: **John Gregory**, AREVA Federal Services, LLC; **Keith Miller**, National Nuclear Laboratory (United Kingdom)

Lead Organizer: **Keith Miller**, NNL

Add'l Organizer: **Leslie Jardine**, L.J. Jardine Services

Paper Reviewer: **John Gregory**, AREVA Federal Services, LLC

#### 1:35 Perspectives on Interim Storage Solutions of Used Nuclear Fuel in the Long Term - 14041

**Catherine Shelton**, William Bracey, AREVA Transnuclear

#### 2:00 From Single Storage Canister to Modular Air Cooled Storage (MACSTOR®)-Canadian Solution and Experience in Responsible Spent Fuel Management - 14578

**Miroljub (Mike) Petrovic**, Candu Energy Inc. (Canada)

#### 2:25 Nuclear Industry Study on the Feasibility of Standardized Transportation, Aging and Disposal Canisters for Used Nuclear Fuel - 14011

**Chris Phillips**, Ivan Thomas, Steven McNiven, EnergySolutions

#### 2:50 Test Results and Analyses in Terms of Aging Mechanisms of Metal Seals in Casks for Dry Storage of SNF - 14255

**Sven Nagelschmidt**, Ulrich Probst, Uwe Herbrich, Dietmar Wolff, Holger Völzke, BAM Federal Institute for Materials Research and Testing (Germany)

#### 3:20 Closed Fuel Can Venting and Hydride Passivation - 14305

Jonathan Fitzpatrick, **Gerard Peplinski**, Cody Ziebarth, Atomic Energy of Canada Limited (Canada)

#### 3:45 Development of Vibrational Sum Frequency Spectroscopy for Nanoscale Investigation of Corrosion in Humidity Environments - 14422

**Steve Walters**, National Nuclear Laboratory; Robert Lindsay, Francis Lydiatt, Dimitri Chekulaev, Andrew Thomas, University of Manchester (United Kingdom)

#### 4:10 Applicability of Commercial Nuclear Power Used Fuel Handling and Dry Storage Solutions to US DOE Non-Fuel Waste Forms - 14461

**David Bland**, Jennifer Gamble, OnPoint Power: TriVis Inc.



## Session 94

1:30 PM - 5:00 PM

Room 101C

### Geologic Disposal Design & Engineering

Co-Chairs: **Enrique Biurrun**, *DBE Technology GmbH* (Germany); **Ines Triay**, *FIU*  
Lead Organizer: **Roger Nelson**, *US DOE*  
Add'l Organizers: **Gérald Ouzounian**, *Andra* (France); **Chuan-Fu Wu**, *ES&H Solutions*  
Paper Reviewer: **Leif Eriksson**, *Nuclear Waste Dispositions*

- 1:35 Inflow Handling during the Emplacement of the Backfill in the KBS-3 Concept** - 14238  
**Ville Koskinen**, *Fortum Power and Heat oy* (Finland); **Torbjörn Sandén**, *Clay Technology AB* (Sweden)
- 2:00 Designing, Commissioning And Monitoring of 40% Scale Bentonite Buffer Test** - 14260  
**Harri Kivikoski**, **Pietti Marjavaara**, *VTT Technical Research Centre of Finland*; **Pasi Rantamäki**, *Posiva Oy* (Finland)
- 2:25 Instrumentation and Monitoring of Tunnel Plug in ONKALO** - 14261  
**Ilkka Hakola**, **Erika Holt**, **Matti Halonen**, **Edgar Bohner**, *VTT Technical Research Centre of Finland*; **Kimmo Kempainen**, **Petri Koho**, **Antti-Jussi Kylliäinen**, *Posiva Oy* (Finland)
- 2:50 Customized Bentonite Pellets – Extrusion Manufacturing and Gap Filling & Thermal Performance Properties** - 14262  
**Pietti Marjavaara**, **Erika Holt**, *VTT Technical Research Centre of Finland*; **Pasi Rantamäki**, *Posiva Oy* (Finland)
- 3:20 Designed Buffer Components for Finnish KSB-3V Concept** - 14285  
**Erika Holt**, **Markku Juvankoski**, *VTT Technical Research Centre of Finland*; **Pasi Rantamäki**, *Posiva Oy* (Finland)
- 3:45 Run of Mine (ROM) Salt for Gamma Shielding of Remote Handled (RH) Transuranic (TRU) Waste Emplaced on the Repository Floor at the Waste Isolation Pilot Plant (WIPP) to Augment Existing Borehole Emplacement Capacity** - 14417  
**Daniel Taggart**, *Los Alamos National Laboratory*; **Roger Nelson**, *US DOE*
- 4:10 Preliminary Evaluation of Dual-Purpose Canister Disposal Alternatives** - 14506  
**Ernest Hardin**, *Sandia National Laboratories*; **William Nutt**, *Argonne National Laboratory*; **Harris Greenberg**, *Lawrence Livermore National Laboratory*; **Robert Howard**, *John Scaglione*, *Oak Ridge National Laboratory*; **Joe Carter**, *Savannah River National Laboratory*; **Robert Clark**, *US DOE*

**4:35 SSM's Evaluation of the Long-Term Safety of the Proposed Repository for Spent Nuclear Fuel at the Forsmark Site in Sweden: Early Experiences from the Main Review Phase** - 14555

**Bo Strömberg**, *Björn Dverstorp*, *Swedish Radiation Safety Authority* (Sweden)

## Session 95

3:15 PM - 5:00 PM

Room 103AB

### Panel: Challenges in US DOE HLW Tank Management

Co-Chairs: **James Cooper**, **Kenneth Picha**, *US DOE*  
Lead Organizer: **Tom Brouns**, *Pacific Northwest National Laboratory*  
Add'l Organizer & Panel Reporter: **Craig West**, *US DOE*

This panel focuses on the successes and challenges of the US DOE HLW tank management from the perspective of different field site representatives. Discussion will cover technical, regulatory, human capital and budgetary areas.

**Panelists include:** **Jean Ridley**, *Disposition Programs Director*, *Savannah River Operations*, *US DOE*; **Ken Rueter**, *President and Project Manager*, *Savannah River Remediation*; **L. David Olson**, *President and Project Manager*, *Washington River Protection Solutions* and **Ken Whitham**, *Assistant Manager*, *Idaho Cleanup Project*.

## Session 96A

1:30 PM - 3:10 PM

Room 101B

### International Deep Repository Progress – Part 3 of 3

Co-Chairs: **Gerard Bruno**, *IAEA* (Austria); **Thilo von Berlepsch**, *DBE Technology GmbH* (Germany)  
Lead Organizer: **Enrique Biurrun**, *DBE Technology GmbH* (Germany)  
Add'l Organizers: **Leif Eriksson**, *Nuclear Waste Dispositions*; **Gérald Ouzounian**, *Andra* (France); **Abraham Van Luik**, *US DOE-EM*  
Paper Reviewer: **Chuan-Fu Wu**, *ES&H Solutions*

- 1:35 Cigeo, the Project for Geological Disposal Project of Radioactive Waste in France** - 14014  
**Gérald Ouzounian**, **Alain Harman**, **Thibaud Labalette**, **Marie-Claude Dupuis**, *Andra* (France)

**2:00 WIPP Status and Plans – 2014 - 14442**

*Roger Nelson, Joe Franco, US DOE*

**2:25 Final Disposal and Retrievability in the German Repository Concept - 14100**

*Frank Charlier, International Nuclear Safety Engineering; Bruno Thomauske, RWTH Aachen University (Germany)*

### Session 96B

**3:15 PM - 5:00 PM**

**Room 101B**

## Performance of Disposal Systems, Facilities and Sites for LLW Part 2 of 2

Co-Chairs: **Bob Hiergesell**, *Savannah River National Laboratory*; **Linda Suttora**, *US DOE*

Lead Organizer & Paper Reviewer: **Bob Hiergesell**, *SRNL*

Add'l Organizers: **Roger Seitz**, *Savannah River National Laboratory*; **Linda Suttora**, *US DOE*

**3:20 Performance Assessment for the Environmental Restoration Disposal Facility, Hanford Site, Washington - 14216**

*Sunil Mehta, Raziuddin Khaleel, Steve Baker, Nazmul Hasan, INTERA Inc.; William McMahon, CH2M HILL PRC; R. Douglas Hildebrand, Owen Robertson, US DOE; William Borlaug, Michael Casbon, Washington Closure Hanford*

**3:45 Waste Acceptance and Disposal at the Nevada National Security Site - 14448**

*Vefa Yucel, Greg Shott, Pat Arnold, National Security Technologies, LLC; Jhon Carilli, US DOE*

**4:10 Integration between Performance Assessments Does Not Equal Duplication - 14577**

*Kent Rosenberger, Savannah River Remediation*

**4:35 Liquid Waste Operations Initiatives in Performance Assessment Evolution - 14469**

*Mark Layton, Savannah River Remediation, LLC*

### Session 97

**1:30 PM - 5:00 PM**

**Room 105AB**

## Project Management Improvements - Planning through Completion - Scope, Cost, & Schedule Control

Co-Chairs: **Mike Nosbisch**, *Project Time & Cost, Inc.*; **Mark Arenaz**, *US DOE*

Lead Organizer & Paper Reviewer: **Christopher Timm**, *PECOS Mgmt Svcs, Inc.*

Add'l Organizers: **Neil Davis**, *Savannah River Remediation, LLC*; **Steven Ferries**, *CH2M HILL PRC*; **Mike Nosbisch**, *Project Time & Cost, Inc.*

**1:35 Project Assessments: An Essential Element of Project Management during Project Execution - 14505**

*James Burritt, Longenecker and Associates*

**2:00 Expediting Closeout of a Major US DOE Contract: The Washington Closure Hanford / US DOE-RL Closeout Office Avoidance Plan - 14181**

*Dan Plung, Scott Myers, Washington Closure Hanford; Douglas Aoyama, US DOE*

**2:25 Waste Management System Architecture Evaluations - 14564**

*William Nutt, Edgar Morris, Francesc Puig, Argonne National Laboratory; Thomas Cotton, Complex Systems Group LLC; Robert Howard, Joshua Jarrell, Robert Joseph III, ORNL*

**2:50 Costing and Financing of the Swedish Waste Management System - 14540**

*Per-Arne Holmberg, Swedish Nuclear Fuel and Waste Management Co (Sweden)*

**3:20 Technical Cooperation for Improving Cradle-to-Grave Control of Sealed Radioactive Sources in the Mediterranean Region - 14655**

*Juan Carlos Benitez-Navarro, Vilmos Friedrich, Monika Kinker, Eric Reber, Manuel Recio, Jose Miguel Roncero Martin, IAEA (Austria)*

**3:45 The IAEA Activities in the End-of-Life Management of Disused Sealed Radioactive Sources - 14648**

*Gerard Bruno, Monika Kinker, Kai Moeller, IAEA; Paul Degnan, International Atomic Energy Agency (Austria)*

**4:10 Nuclear Supply Chain: Perspective of a Component and Sub-system Fabricator - 14474**

*James Stouch, Precision Custom Components*

## Poster Session 98

1:30 PM - 5:00 PM 1st Floor Foyer

### Non-Paper Posters for Emerging Issues

Co-Chairs: **Gary Benda**, *WM Symposia*; **Linda Lehman**, *Consultant*

Lead Organizer: **Gary Benda**, *WM Symposia*

- A1. Chemical Waste Water Clean-Up and Fission Product Sorption and Removal Studies on (Salt)Watered Soil- A Fukushima Related Study on Loss of Coolant Accidents** - 14497  
*Sabrina Tietze*, *Chalmers University of Technology (Sweden)*
- A2. Progress and Development of the Fukushima Daiichi Advanced Liquid Processing System in Remediation of the Post Accident Cooling Water** - 14668  
*Tim Milner*, *EnergySolutions*
- A3. Rapid Uptake of Cesium and Americium by Sequestering Agents from Complex Decontamination Solutions** - 14608  
*Carol Mertz*, *Michael Kaminski*, *Nadia Kivenas*, *Luis Ortega*, *Argonne National Laboratory*
- A4. Synthesis and Characterization of Ca(La)TiO<sub>3</sub> Particles** - 14080  
*Yeon-ku Kim*, *Choong Hwan Jung*, *Korea Atomic Energy Research Institute (Republic of Korea)*
- A5. Synthesis of Perovskite Sr Doped Calcium Titanate Powders by Using Solution Combustion Synthesis** - 14120  
*Choong Hwan Jung*, *KAERI (Republic of Korea)*
- A6. Encapsulation of HLW into Different Matrices** - 14636 *Jacoba Johanna Badenhorst*, *Necsa (South Africa)*
- A7. Nuclear Fuel Cycle – Final Repository for Nuclear Waste Research** - 14443  
*Lovisa Bauhn*, *Stellan Holgersson*, *Stefan Allard*, *Christian Ekberg*, *Chalmers University of Technology (Sweden)*
- A8. Thermal Analysis Methods for the Characterization of Rocks, Sediments and Salts** - 14398  
*Ekkehard Post*, *NETZSCH Gerätebau GmbH (Germany)*; *Jack Henderson*, *NETZSCH Instruments North America, LLC*
- A9. A Performance Study of High Energy X-Ray Imaging Techniques to Assure Integrity of Waste Package Encapsulation and Compliance with Waste Acceptance Criteria for Storage** - 14533  
*Steve Halliwell*, *VJ Technologies, Inc.*; *Apostolos Christodoulou*, *VJ Technologies Europe (France)*

**A10. Ability of Filter Sealing Surfaces to Withstand High Differential Pressure** - 14548  
*Charles Waggoner*, *Mississippi State University*

**A11. Evaluating HEPA Filter Performance under Design Basis Conditions** - 14549  
*Charles Waggoner*, *Mississippi State University*

**A12. Deep Vadose Zone Characterization at the Hanford Site: Geophysical Log Evaluation** - 14528  
*Rick McCain*, *Paul Henwood*, *S.M. Stoller Corporation*

**A13. Savannah River National Laboratory (SRNL) Support of the Sampling and Analysis Plan for the Low-Level Waste Form at the Savannah River Site** - 14118  
*Marissa Reigel*, *Mark Fowley*, *Savannah River National Laboratory*

**A14. Mobile Application For Collection of Environmental Data** - 14671  
*Kalem Sessions*

**A15. Combining Rotary Microfilter (RMF) Liquid/Solid Separation and Small Column Ion Exchange (SCIX) to Reduce and Decontaminate Radioactive Sludge in Waste Tanks** - 14676  
*Jacqueline Fonnesbeck*, *Beargrass Scientific*

**A16. Acting for Passive Safety** - 14675  
*Jantine Schröder*, *SCK-CEN / University of Antwerp (Belgium)*

**A17. The Chemical Decontamination Method (HOP) with the Re-Contamination Restraint Technique (E-LTNC)** - 14678  
*Motohiro Aizawa*, *Hitachi-GE Nuclear Energy Ltd (Japan)*; *Makoto Nagase*, *Hitachi-GE Nuclear Energy, Ltd (Japan)*

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## March 6, Thursday AM

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### Session 99

8:30 AM - 12:00 PM Room 104AB

### Panel: Technology Support and Implementation for Clean Up of Fukushima Daiichi NPP

Co-Chairs: **Kurt Gerdes**, *US DOE*; **Jeff Griffin**, *Savannah River National Laboratory*  
Lead Organizer: **Jeannette Hyatt**, *Savannah River National Laboratory*

Add'l Organizers: **Kurt Gerdes**, *US DOE*; **Angie Jones**, *AMEC*; **John Mathieson**, *UK NDA (United Kingdom)*

Panel Reporter: **Andrew Fellingner**, *Savannah River National Laboratory*

This panel will focus on the continuing support for Fukushima cleanup efforts. Representatives from US & UK industry & Embassy appointees will address Fukushima Daiichi decommissioning and environmental remediation activities. Amongst the topics to be discussed are innovative approaches, progressive learning opportunities, successes realized and perspective on challenges.

**Panelists include:** **Wayne Johnson**, *Director, Energy and Environmental Sciences, Pacific Northwest National Laboratory*; **Robert Sindelar**, *US Embassy Science Fellow to Japan 2013, Savannah River National Laboratory*; **Jeff Miller**, *Energy Attaché, Director, US DOE Japan Office, US Embassy Tokyo (Japan)*; **Irena Mele**, *Special Advisor, Division of Nuclear Fuel Cycle and Waste Technology, IAEA (Austria)*; **Paul Flemming**, *Director, Transformational Growth, Nuclear Services, AMEC (United Kingdom)*; **John Raymont**, *President, Kurion, Inc* and **James Braun**, *President AvanTech, Inc.*

## Session 100

**8:30 AM - 12:00 PM Room 103AB**

### Panel: Oak Ridge Reservation Innovative Cleanup Approaches

Co-Chairs: Cathy Hickey, *CH2M HILL, Inc.*; Mark Whitney, *US DOE OREM*  
Lead Organizer: Cathy Hickey, *CH2M HILL, Inc.*  
Add'l Organizers: Susan Cange, *US DOE*; Allen Schubert, *URS | CH2M Oak Ridge LLC (UCOR)*  
Panel Reporter: Betsy Child, *Restoration Services, Inc.*

This panel will focus on the unique challenges and innovative solutions associated with the cleanup of the three sites that comprise the Oak Ridge Reservation. These sites are: the Oak Ridge National Laboratory, Y-12 National Security Complex, and the East Tennessee Technology Park (the former K-25 Gaseous Diffusion Plant). The cleanup mission of the Oak Ridge Reservation is critical to address environmental and human health risk issues both on and off the Reservation, to enable the ongoing modernization of the Office of Science and the National Nuclear Security Administration Missions, and to achieve the reindustrialized ETPP site end-state through the creative reuse of US DOE assets. The panel will include presentation and discussions that highlight some of the innovative approaches used in Oak Ridge to advance the cleanup mission given the challenges that our country is facing today.

**Two iPads donated by UCOR will be given away to the eligible participants attending this session.**

## 8:30 am - Part 1

- Recent Accomplishments and Looking Forward – **James Mark Whitney**, *Manager, US DOE OREM*
- Developing a Comprehensive Groundwater Strategy for the Oak Ridge Reservation – **Bill McMillan**, *Portfolio Federal Project Director, US DOE OREM*
- K-25/K-27 D&D Best Practices and Innovations – **Steve Dahlgren**, *K-25/K-27 D&D Manager, URS|CH2M Oak Ridge (UCOR)*
- The Future of the K-25 Site through Historic Preservation and Reindustrialization – **Sue Cange**, *Deputy Manager, US DOE OREM*

*iPad Give-Away – UCOR Sponsored Raffle (followed by short break)*

## 10:15 am - Part 2

- Oak Ridge Property Disposal Challenges and Solutions – **Carmelo Melendez**, *Office of Property Mgmt & Office of Acquisition Mgmt., US DOE*
- Achieving Success through Building Strong Partnerships with our Contractors – **Heather Cloar**, *Contracting Officer, US DOE OREM* & **Matt Marston**, *COO, UCOR*
- The Importance of Collaborating with the Regulators – **Franklin Hill**, *Director, Superfund Division, EPA Region 4*
- The Importance of a Strong Partnership with the Community – **Jenny Freeman**, *Vision Implementation Manager, StrataG*

*iPad Give-Away – UCOR Sponsored Raffle*

**Panelists include the presenters as shown above.**

## Session 101

**Merged with Session 23 on Monday**

### Panel: The Future of Consent-Based Disposal Siting and Discussion of the Alternatives

This panel focuses on Spent (and Used) Nuclear Fuel (SNF/UNF) disposal. The panel will discuss technical, institutional, as well as broader political issues associated with expansion of nuclear power by solving the SNF/UNF waste disposal issue. It has been merged with Session 23.

## Session 102

8:30 AM - 12:00 PM Room 102BC

### Records, Knowledge and Memory (RK&M) for Geologic Repositories of Nuclear Waste - Part 1 of 2

Co-Chairs: **Russell Patterson**, *US DOE*; **Abraham Van Luik**, *US DOE-EM*

Lead Organizer: **Abraham Van Luik**, *US DOE-EM*

Paper Reviewer: **Tom Klein**, *URS-PS*

- 8:35 Preservation of Records, Knowledge and Memory (RK&M) across Generations. An Overview of the Eponymous OECD/NEA Project.** - 14425  
**Claudio Pescatore**, *OECD Nuclear Energy Agency (NEA) (France)*
- 9:00 When Dealing with the Long-Term, Care as to How Terms are Used: Reflections from the OECD/NEA RK&M Project Glossary** - 14437  
**Stephan Hotzel**, *GRS mbh (Germany)*; **Philippe Raimbault**, *Direction de la Sûreté Nucléaire et de la Radioprotection (France)*; **Anne Claudel**, *Nagra (Switzerland)*; **Claudio Pescatore**, *OECD Nuclear Energy Agency (NEA) (France)*
- 9:25 Nuclear Waste as Cultural Heritage of the Future** - 14361  
**Cornelius Holtorf**, *Anders Högberg, Linnaeus University (Sweden)*
- 9:50 The First International Decennial Appraisal of the Detailed Memory of the Marché Disposal Facility** - 14470  
**Jean-Noël Dumont**, *Guillaume Martin, Andra (France)*
- 10:20 How to Increase Knowledge of the Existence of a Nuclear Disposal Facility to Future Generations: Knowledge Footprint – A Perspective from an Operational Facility** - 14221  
**Steve Wagner**, *Sandia National Laboratories*
- 10:45 Reasons for Post-closure Monitoring of the Waste Isolation Pilot Plant Repository** - 14531  
**Punam Thakur**, *Carlsbad Environmental Monitoring and Research Center; Abraham Van Luik, US DOE-EM*
- 11:10 Contribution of Metrology to a Qualified Disposal Monitoring System Stable over Centennial Timescales** - 14031  
**Johan Bertrand**, **Stéphane Plumeri**, *Stephane Buschaert, Andra; Patrick Sollet, Olivier Beaumont, LNE (France)*

- 11:35 Application of Knowledge Management to the UK's Radioactive Waste Management Programme** - 14651  
**Simon Wisbey**, *Alastair Clark, NDA (United Kingdom)*

## Session 103

8:30 AM - 12:00 PM Room 105B

### Worldwide Waste Management Regulatory and Oversight Crosscutting Programs

Co-Chairs: **Ray Clark**, *US EPA*; **Malgorzata K. Sneve**, *Norwegian Radiation Protection Authority (Norway)*

Lead Organizer: **Ray Clark**, *US EPA*

Add'l Organizers: **Malgorzata K. Sneve**, *Norwegian Radiation Protection Authority*; **Christopher Timm**, *PECOS Mgmt Svcs, Inc.*

Paper Reviewer: **Christopher Timm**, *PECOS Mgmt Svcs*

- 8:35 Regulatory Oversight of Disposal Facility Construction and Component Fabrication** - 14244  
**Jussi Heinonen**, *Risto Paltemaa, Kai Hämäläinen, STUK Radiation and Nuclear Safety Authority (Finland)*
- 9:00 Disposal of U-233 as Low Level Waste at the Nevada Nuclear Security Site** - 14175  
**Michael Voegele**, *Consultant*; **Joseph Ziegler**, *Nye County, Nevada*; **Darrell Lacy**, *Nye Cty Nuclear Waste Repository Project*
- 9:25 Nuclear Fuel Site Decommissioning and License Termination** - 14378  
**Heath Downey**, *Nelson Walter, AMEC*
- 9:50 Site Selection in Germany - A Restart** - 14103  
**Bruno Thomauske**, *RWTH Aachen University (Germany)*; **Frank Charlier**, *International Nuclear Safety Engineering (Germany)*
- 10:20 User Interface Features of Information-Analytical System for Radiation Safety of Personnel on the Example of Northwest Center for Radioactive Waste Management "SevRAO"** - 14625  
**Konstantin Chizhov**, *Mazur Ivan, Viktor Kryuchkov, Ilya Kudrin, Federal Medical Biophysical Centre (Russia)*; **Malgorzata K. Sneve**, *Norwegian Radiation Protection Authority (Norway)*

## Session 104

8:30 AM - 12:00 PM Room 106A

### Roundtable: Waste Management Energy Facilities Contractor Operating Group (EFCOG)

Co-Chairs: **Renee Echols**, *Perma-Fix Environmental Svcs, Inc.*; **W.T. (Sonny) Goldston**, *EnergySolutions*  
Lead Organizer: **W.T. Goldston**, *EnergySolutions*  
Add'l Organizers: **Renee Echols**, *Perma-Fix Environmental Svcs, Inc.*; **Christine Gelles**, *US DOE*; **Tammy Monday**, *Perma-Fix Environmental Svcs, Inc.*  
Panel Reporter: **Tammy Monday**, *Perma-Fix Environmental Services, Inc.*

This roundtable will focus on the WM EFCOG working group and will meet to discuss a variety of issues of importance to US DOE waste management operations. The purpose of the WM EFCOG is to seek out and promote the best management and operating practices, cost effective technologies and disposal options for all waste streams generated at US DOE facilities whether destined for US DOE or commercial facilities. Each site representative will provide a radioactive waste management lessons learned briefing.

**Presenters include:** **Linda Suttora**, *US DOE-EM Office of Environmental Compliance, EM11*; **Dennis Carr**, *Fluor B&W Portsmouth*; **Sydney Gordon**, *National Security Technologies, LLC*; **Jim Portsmouth**, *CH2M Hill Plateau Remediation Company*; **Jeannette Hyatt**, *Senior Technical Advisor, Savannah River National Laboratory*; **Jerry O'Leary**, *CH2M Hill*; **Bruce Adams**, *Idaho National Laboratory*; **Kip McDowell**, *Battelle Pacific Northwest National Laboratory*; **Timothy Forrester**, *UT-Battelle Oak Ridge National Laboratory*; **Ty Blackford**, *CH2M Hill Plateau Remediation Company*; **John Gilmour**, *Savannah River Nuclear Solutions*; **Scott Anderson**, *UCOR/ETTP*; **Ashok Kapoor**, *US DOE-EM Office of Packaging & Transportation, EM45*; **Tim Tharp**, *B&W Y-12, LLC*; **Andy Baumer**, *Los Alamos National Security, LLC* and **Kent McDonald**, *Pacific Northwest National Laboratory*.

## Session 105

8:30 AM - 10:10 AM Room 106B

### Non-US Nuclear Power Plant Waste Treatment and Alternatives

Co-Chairs: **Wolfgang Steinwarz**, *Siempelkamp Nukleartechnik GmbH (Germany)*; **Esko Tusa**, *Fortum Power and Heat Oy (Finland)*  
Lead Organizer & Paper Reviewer: **Esko Tusa**, *Fortum Power and Heat Oy*  
Add'l Organizers: **Wolfgang Steinwarz**, *Siempelkamp Nukleartechnik GmbH*

#### 8:35 Handling and Treatment of Low Level Waste in a Sorting, Drying and Compaction Facility in Changjiang, NPP unit 1/2 - 14309

**Stefan Klute**, *Tristan Helwig, Siempelkamp Nukleartechnik GmbH*; **Peter Reinsdorff**, *Siempelkamp Nukleartechnik GmbH (Germany)*

#### 9:00 An Innovative Method to Detect Leaks in a Pipe-in-Pipe Active Liquid Drain System - 14005

**Malcolm Clough**, *Atomic Energy of Canada Limited (Canada)*

#### 9:25 NPP Containment Vent Protection. Why There Is No One-Size-Fits-All Solution - 14424

**Chris Chadwick**, **Adam Swain**, *Porvair Filtration Group (United Kingdom)*

#### 9:50 Italian Nuclear Technology Park - 14037

**Massimo Sepielli**, *Giorgio Giorgiantoni, Mauro Olivetti, Ferdinando Fagnano, Giuseppe A. Marzo, Daniel Taccarello, ENEA (Italy)*

## Session 106

10:15 AM - 12:00 PM Room 106B

### Crosscutting Performance Assessments Risk Management, and Modeling

Co-Chairs: **Kevin Brown**, *Vanderbilt University/CRESP*; **Ming Zhu**, *US DOE*  
Lead Organizer: **Ming Zhu**, *US DOE*  
Add'l Organizer: **Kim Auclair**, *KD Auclair & Assoc.*  
Paper Reviewer: **Kevin Brown**, *Vanderbilt University/CRESP*

#### 10:20 Hanford Site Graded Approach to Vadose Zone Modeling: Current Status and Future Applications - 14674

**Alaa Aly**, *INTERA*; **John Morse**, *US DOE*; **Dale McKenney**, *CH2M HILL PRC*; **Dibakar Goswami**, *Washington State Department of Ecology*

- 10:45 Modeling in Support of SSM's Licensing Review of a Geological Repository for Spent Nuclear Fuel** - 14164  
*Shulan Xu, Björn Dverstorp, Maria Norden, Swedish Radiation Safety Authority (Sweden)*
- 11:10 New Methodology for Realistic Integration of Sorption Processes in Safety Assessments** - 14153  
*Jörg Mönig, Ulrich Noseck, Susan Britz, Judith Flügge, GRS mbH; Vinzenz Brendler, Madlen Stockmann, Helmholtz-Zentrum Dresden-Rossendorf (Germany)*
- 11:35 Present Status of the Closure Plan for Radioactive Waste National Repository from Baita, Bihor, Romania** - 14023  
*Gheorghe Barariu, Raluca Madalina Fako, Florin Sociu, RATEN-CITON; Felicia Nicoleta Dragolici, Elena Neacsu, IFIN-HH (Romania)*

### Session 107

**8:30 AM - 12:00 PM Room 106C**

## Advances in Nuclear Safety Management

Co-Chairs: **Robert Brounstein, TerranearPMC; Judith Connell, Fluor**  
Lead Organizer: **Christopher Timm, PECOS Mgmt Svcs, Inc.**  
Add'l Organizers: **Robert Brounstein, TerranearPMC; Judith Connell, Fluor**  
Paper Reviewer: **Judith Connell, Fluor**

- 8:35 Safety Culture Lessons Learned from the US Chemical Safety Board Incident Investigations** - 14556  
*Lyndsey Fyffe, Steven Krahn, Vanderbilt University; James Hutton, Julie Goeckner, US DOE; James Hutton, Julie Goeckner, US DOE*
- 9:00 Evaluation of Potential Cross-Cutting Trends Associated with Incidents at Washington Closure Hanford** - 14495  
*Megan Proctor, Washington Closure Hanford*
- 9:25 Improving Safety and Emergency Preparedness for Storage of Cs/Sr Capsules from Lessons Learned From Fukushima Events** - 14022  
*Connie Simiele, Ty Blackford, David Levinskas, John Lavender, Sheila Godfrey, Jan Pennock, Lori West, CH2M HILL PRC*
- 9:50 A New Approach for Feature, Event, and Process (FEP) Analysis of UNF/HLW Disposal** - 14314  
*Geoff Freeze, Christi Leigh, S. David Sevougian, Sandia National Laboratories; Jens Wolf, Jörg Mönig, Dieter Buhmann, GRS mbH*

*(Germany); Michael Gross, Nuclear Regulatory and Support Services*

- 10:20 Virtual Training Innovations to Increase Safety in a Nuclear Environment** - 14632  
*Jeannette Hyatt, Mike Serrato, John Bobbitt, Savannah River National Laboratory*

### Session 108

**8:30 AM - 12:00 PM Room 102A**

## D&D of US DOE Facilities

Co-Chairs: **Con Lyras, Australian Nuclear Science & Technology Organisation (Australia); Robert Vellinger, TerranearPMC, LLC**  
Lead Organizer & Paper Reviewer: **Andrew Szilagyi, US DOE**  
Add'l Organizer: **Julia Tripp, Idaho National Laboratory**

- 8:35 Managing Changed Conditions/Activities—D&D of the Paducah US DOE C-340 Metals Reduction Complex** - 14304  
*Craig Jones, Brad Montgomery, LATA Environmental Services of Kentucky; Robert Seifert, US DOE*
- 9:00 Removal of the 340 Vault from the Hanford 300 Area using Disodium Phosphate** - 14343  
*Chris Strand, Scott Myers, Washington Closure Hanford; Brad Herzog, CH2M HILL, Inc.; Eric Ison, TradeWinds Inc; Rudolph Guercia, US DOE*
- 9:25 Project Planning Integration and Controls Organization Approach Success at East Tennessee Technology Park (ETTP) Contract, Oak Ridge, TN** - 14370  
*Patrick Timbes, Ray Haynes, URS | CH2M Oak Ridge LLC*
- 9:50 618-10 Burial Ground: Vertical Pipe Units Remediation** - 14532  
*Scott Myers, Washington Closure Hanford*
- 10:20 K-27 Program & Project Implementation (Separating Operations Activities from Capital Asset Project)** - 14098  
*Daniel Macias, UCOR- LLC-ETTP*
- 10:45 In-Situ Decommissioning Lessons Learned** - 14042  
*Charles Negin, Charles Umland, Project Enhancement Corporation; Andrew Szilagyi, US DOE*
- 11:10 Contaminated Waste Minimisation Using Chemical Extraction Technology** - 14316  
*Mark Musgrave, Scott Fay, Matom Ltd (UK)*
- 11:35 Scintillating Phosphor Spray for Remote Detection of Tc-99** - 14183

*David Glasgow, Linda Lewis, Brenda Smith, Rick Moyers, Fred Montgomery, Cyril Thompson, ORNL; Andrew Szilagyi, US DOE*

## Session 109

**8:30 AM - 12:00 PM Room 101C**

### Application of Innovative D&D Technologies

Co-Chairs: **Rick Demmer**, Idaho National Laboratory; **Hans-Juergen Steinmetz**, Forschungszentrum Juelich GmbH (Germany)  
Lead Organizer: **Rick Demmer**, INL  
Add'l Organizers: **Bernard Poncet**, EDF-CIDEN (France); **Detlef Schmidt**, Nuclear Projects Consultancy (Germany)  
Paper Reviewer: **Detlef Schmidt**, Nuclear Projects Consultancy

- 8:35 New Developments in Laser Cutting for Nuclear Decommissioning - 14045**  
*Paul Hilton, Ali Khan, TWI Ltd (UK)*
- 9:00 A Trial of 4D Cross-Borehole Electrical Resistivity Tomography (ERT) for Detecting and Monitoring Subsurface Leakage and Contaminant Transport, Supporting the Decommissioning of Legacy Silos at the Sellafield Site, UK - 14161**  
*Oliver Kuras, Paul Wilkinson, Phil Meldrum, Lucy Oxby, Sebastian Uhlemann, Jonathan Chambers, British Geological Survey; Andrew Binley, Lancaster Environment Centre; James Graham, NNL; Gareth Dewey, Nick Atherton, Sellafield Ltd (United Kingdom)*
- 9:25 An Evaluation of Electrokinetic Transport of Radioactive Species through Concrete for Application as a Non-Destructive In-Situ Remediation Technique - 14102**  
*Andrew Parker, Malcolm Joyce, Colin Boxall, Lancaster University (United Kingdom)*
- 9:50 Remote Characterisation Technology for Decommissioning - 14131**  
*Simon Watson, Barry Lennox, Alexandru Stancu, Peter Green, University of Manchester; Mark Dowson, Sellafield Ltd (United Kingdom)*
- 10:20 A New Modular Hydraulic Power Manipulator for Remote Handling Operations in High Radiation Environments - 14169**  
*Geoff Ashworth, Carwyn Jones, James Fisher Nuclear Ltd (United Kingdom)*
- 10:45 The Ground Environment Management Scheme (GEMS): Technologies for Detecting and Monitoring Subsurface Leakage and Contaminant Transport,**

**Supporting the Decommissioning of Legacy Silos at the Sellafield Site, UK - 14162**  
*Gareth Dewey, Nick Atherton, Tony Ball, Sellafield Ltd; Oliver Kuras, Paul Wilkinson, Phil Meldrum, British Geological Survey (UK)*

- 11:10 Freeze Technology Applications for the Nuclear Industry, Applicable to VLLW, LLW, ILW as well as in ER and the NORM Industry - 14594**  
*Maria Lindberg, Studsvik Nuclear AB (Sweden); Luke O'Brien, Stephen Baker, Robin Orr, NNL (United Kingdom); Laurie Judd, NuVision Engineering, Inc.; William (Bill) King, SRNL; Pramod Mallick, Gary Smith, US DOE*
- 11:35 CNC Milling as a Decontamination Method for Magnox Pond Skips - 14322**  
*Herbert Cruickshank, Ian Pullin, Magnox Ltd; Phil Kightley, Taylor Kightley Engineering Co. Ltd. (United Kingdom)*

## Session 110

**8:30 AM - 12:00 PM Room 101B**

### US - Formerly Utilized Sites Remedial Action Program (FUSRAP) and Other US Army Corp of Engineers Projects

Co-Chairs: **Margaret MacDonell**, Argonne National Laboratory; **Allen Roos**, USACE  
Lead Organizer & Paper Reviewer: **Allen Roos**, USACE  
Add'l Organizer: **Margaret MacDonell**, ANL

- 8:35 Hydrogeologic Conditions at the Niagara Falls Storage Site, New York - 14142**  
*William Frederick, John Busse, USACE*
- 9:00 Colonie FUSRAP Site Two Year Monitored Natural Attenuation Study of Groundwater - 14441**  
*James Moore, Phyllis Della Camera, USACE; Mark Hardner, Tom Mathison, Shaw Environmental, Inc.*
- 9:25 Sources of Bias in Environmental Sample Radioisotope Activity Measurements at USACE FUSRAP Maywood Laboratory - 14353**  
*Jough Donakowski, David Hays, USACE; Brian Tucker, CB&I Federal Services*
- 9:50 Vicinity Property Assessments at Formerly Utilized Sites Remedial Action Program Project Sites in the New York District - 14188**  
*Ann Ewy, David Hays, USACE*
- 10:20 Application of Soil Sorting for Depleted Uranium Fragments - 14373**  
*Heath Downey, Jeffrey Lively, AMEC*



**10:45 A Case-Study: Implementation of Independent Final Status Survey in Support of Remediation at a FUSRAP Site** - 14318

*Nick Berliner, Mike Winters, Scott Hay, Cabrera Services, Inc.; Eric Barbour, Brian Hearty, USACE*

**11:10 Addressing Beryllium Health and Safety at the Luckey FUSRAP Site** - 14647

*Stephen Buechi, Stephen Bousquet, John Busse, Karen Keil, USACE*

**11:35 Importance of On-Site Meteorological Data for Remedial Action Projects: NFSS Example** - 14680

*John Busse, Karen Keil, Jane Staten, Neil Miller, Michelle Barker, USACE; Young-Soo Chang, Margaret MacDonell, Lisa Durham, Argonne National Laboratory*

## Session 111

**8:30 AM - 12:00 PM Room 105C**

### Package Design

Co-Chairs: **Stephen O'Connor, US DOE; Mike Snyder, MHF Services**

Lead Organizer: **Mike Snyder, MHF Services**

Add'l Organizers: **Paul Jones, DeNuke Contracting Services, Inc.; Olaf Oldiges, Daher-NCS (Germany)**

Paper Reviewer: **Mike Nolan, Lucas Engineering & Management Services**

**8:35 Numerical Analysis of Cask Accident Scenarios in Storage Facilities** - 14541

*Mike Weber, Uwe Zencker, Dietmar Wolff, Holger Völzke, Uwe Herbrich, Sven Nagelschmidt, BAM Federal Institute for Materials Research and Testing (Germany)*

**9:00 After the A2: Experiences with a Multi-Energy Approach for Type B Package Shielding** - 14325

*Robert Quinn, James Hopf, Brandon Thomas, EnergySolutions*

**9:25 Development, Analyses and Validation of Finite Element Model of FSC 2005** - 14591

*Chi-Fung Tso, Amar Mistry, Arup (United Kingdom); Olaf Oldiges, Daher-NCS; Joerg Melzer, Gerald Tschan, WAK GmbH (Germany)*

**9:50 Detection and Monitoring of Cracks in a Concrete Buffer from DIC and AE Measurements** - 14439

*Lou Areias, EIG EURIDICE & VUB; Bart Craeye, Betonadvies Gijko; Geert De Schutter, Magnel Laboratory for Concrete Research; Lincy Pyl, Sokratis Iliopoulos, Jun Gu, Dimitrios Aggelis, MeMC/VUB; Robert Gens, Philippe Van Marcke, Erik Coppens, ONDRAF/NIRAS; Alain*

*Van Cotthem, Tractebel Engineering (Belgium)*

**10:20 Dynamic Penetration Tests on Shock Absorbing Damping Concrete** - 14166

*Robert Scheidemann, Eva Kasperek, Karsten Müller, Bernhard Droste, Holger Völzke, Linan Qiao, BAM Federal Institute for Materials Research and Testing (Germany)*

**10:45 Assessment Strategy of Numerical Analyses of RAM Package Components** - 14619

*Lars Mueller, Viktor Ballheimer, Frank Wille, Steffen Komann, BAM Federal Institute for Materials Research and Testing; Olaf Schilling, TÜV Rheinland, Industrial Services GmbH (Germany)*

**11:10 Analytical Model Methodology Development and Demonstration of Approach on Used Fuel Performance Characterization for Condition of Normal Transportation** - 14568

*Harold Adkins, Jr, PNNL; Kenneth Geelhood, Scott Sanborn, Brian Koeppe, Nicholas Klymyshyn, Pacific Northwest National Laboratory*

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## March 6, Thursday PM

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## Session 112

**1:30 PM - 5:00 PM Room 102BC**

### Panel: Management of Radioactive Waste Following a Nuclear Accident or Extreme Contamination Scenario

Co-Chairs: **Larry Camper, US NRC; Irena Mele, IAEA (Austria)**

Lead Organizer: **Larry Camper, US NRC**

Panel Reporter: **John Greeves, Talisman International**

This Thursday afternoon featured panel will focus on the remediation, decommissioning and related waste management aspects following a major nuclear accident or cleanup of an extreme contamination scenario. The panel will also address the crises communication which took place during these events as well as communication with the public in general during nuclear accidents or contamination events. The panel will address the following sites: Three Mile Island Nuclear Power Plant (NPP), Chernobyl NPP (Ukraine), Fukushima NPP (Japan), Windscale Pile I (United Kingdom) and the Rocky Flats Infinity Rooms remediation. Several of the panelists also took part in the "IAEA-International Experts Meeting on Decommissioning and Remediation after an Accident" in January 2013.

**Panelists include: Martin T. Cross**, PhD, *Principal Consultant, Nuvia Ltd. (United Kingdom)*; **Jack Devine**, *Chief Decommissioning Officer, Sellafield Ltd. (USA)*; **Jim McIlvaine**, *Chesapeake Nuclear Services (USA)*; **Francis X. Cameron**, *Principal Consultant, Zero Gravity Group (USA)*; **Robert Kury**, *Vice President Nuclear Liabilities D&D, Program Management, CH2MHill (USA)* and **Kazuhiro Suzuki**, *Executive Director, International Research Institute for Nuclear Decommissioning (Japan)*.

### Session 113

**1:30 PM - 5:00 PM Room 105AB**

## Papers/Panel: Prospects for an International (Multi-Country) Repository

Co-Chairs: **Enrique Biurrun**, *DBE Technology GmbH (Germany)*; **Leif Eriksson**, *Nuclear Waste Dispositions*  
Lead Organizer & Paper Reviewer: **Leif Eriksson**, *Nuclear Waste Dispositions*  
Add'l Organizers: **Enrique Biurrun**, *DBE Technology GmbH*; **Charles McCombie**, *MCM Consulting*; *Arius Association (Switzerland)*; **Keith Miller**, *National Nuclear Laboratory (United Kingdom)*  
Panel Reporter: **Keith Miller**, *NNL*

This paper and panel session will discuss multi-national repositories for UNF, SNF and/or other long-lived HLW. After the papers are presented, the discussions will focus on the implications and progress made subsequent to the Directive adopted by the European Union on 19 July 2011 allowing its member states/nations to host multi-national nuclear-fuel-cycle-waste inventories of SNF, UNF and HLW.

**Panelists include: Hans Codee**, *COVRA (Netherlands)*; **Charles McCombie**, *Arius (Switzerland)*; **John Mathieson**, *NDA (United Kingdom)*; **Graham Fairhall**, *NNL (United Kingdom)* and **James Voss**, *Predicus, LLC*.

- 1. Macroeconomic Impacts of an International Repository** - 14048  
**James Voss**, *Predicus, LLC*; *Ralph Stoll, Predicus LLC*
- 2. Towards a European Regional Geological Repository** - 14620  
**Charles McCombie**, *MCM Consulting*; *Arius Association*; *Neil Chapman, Arius Association (Switzerland)*; *Ewoud Verhoef, COVRA N.V. (The Netherlands)*
- 3. Multinational European Nuclear Waste Disposal, Looking Off-Shore** - 14099  
**Hans Codee**, *Ewoud Verhoef, COVRA N.V. (Netherlands)*

### Session 114

**1:30 PM - 5:00 PM Room 103AB**

## Papers/Panel: Records, Knowledge and Memory (RK&M) for Geologic Repositories of Nuclear Waste Part 2 of 2

Co-Chairs: **Russell Patterson** and **Abraham Van Luik**, *US DOE*  
Lead Organizer: **Abraham Van Luik**, *US DOE-EM*  
Add'l Organizers: **Tom Klein**, *URS-PS*; **Russell Patterson**, *US DOE*; **Claudio Pescatore**, *OECD Nuclear Energy Agency (France)*  
Panel Reporter: **Russell Patterson**, *US DOE*  
Paper Reviewer: **Tom Klein**, *URS-PS*

This paper and panel session will focus on ideas and views on the permanent marker system for geologic repositories of nuclear waste and focus on identifying a uniform message that should be told to future generations. The hope is to get as many interested professionals, educators, and young professionals as possible together to discuss in some detail two items: 1) What internationally agreed to "message" should be included in all permanent markers programs, and 2) How/Where should these messages be archived and transmitted. We encourage all young professionals who are interested in the topic of passing information to future generations to attend and provide their view points on the subject. After the papers are presented, the panel will discuss these issues.

**Panelists include: Claudio Pescatore**, *NEA-OECD (France)*; **Erik Setzman**, *SKB (Sweden)*; **Roger Seitz**, *SRNL*; **Jantine Schroder**, *SCK-CHEN (Belgium)*; **Simon Wisbey**, *NDA (United Kingdom)* and **Peter Van Wyck**, *Concordie University (Canada)*.

- 1. Markers and Deep Geological Repositories – Learning within the OECD/NEA Project on the Preservation of Records, Knowledge and Memory (RK&M) across Generations** - 14589  
**Jantine Schröder**, *CEN/SCK - The Belgian Nuclear Research Centre (Belgium)*; **Claudio Pescatore**, *OECD Nuclear Energy Agency (NEA) (France)*
- 2. Preservation of Information and Communication with Future Generations** - 14509  
**Erik Setzman**, *SKB (Sweden)*

## Session 115

1:30 PM - 3:10 PM

Room 105C

### US DOE Tank Waste Program Integration

Co-Chairs: **Daniel McCabe**, *Savannah River National Laboratory*; **Karthik Subramanian**, *Savannah River Remediation, LLC*

Lead Organizer: **William Wilmarth**, *SRNL*

Add'l Organizers: **Vijay Jain**, *Savannah River*

*Remediation*; **Larry Ling**, *Savannah River Remediation*

Paper Reviewer: **Harry Babad**, *Author & Consultant*

#### 1:35 Waste Treatment Planning for Challenging Hanford Tank Waste - 14114

*Paul Certa, Tom Crawford, Jeremy Belsher, Laura Cree, Taran Dhaliwal, Washington River Protection Solutions; Eric Slaathaug, Bechtel National, Inc.*

#### 2:00 One System Integrated Project Team Progress in Coordinating Hanford Tank Farms and the Waste Treatment Plant - 14214

*Garth Duncan, Bechtel National, Inc.; Chris Harrington, US DOE; Raymond Skwarek, Washington River Protection Solutions*

#### 2:25 Hanford and Savannah River Site Programmatic and Technical Integration - 14307

*Gene Ramsey, Karthik Subramanian, Lance Ling, Martin Wheeler, Washington River Protection Solutions; Amy Ramsey, AEM Consulting; Connie Herman, SRNL*

#### 2:50 Implementation of Recommendations from the One System Comparative Evaluation of the Hanford Tank Farms and Waste Treatment Plant Safety Bases - 14137

*Richard Garrett, Ingle Paik, Belinda Niemi, Washington River Protection Solutions; Jeffrey Buzek, AREVA Federal Services LLC; Fred Beranek, Mukesh Gupta, Jeffrey Lietzow, Frank McCoy, URS*

## Session 116

3:15 PM - 5:00 PM

Room 105C

### Storage and Retrieval of HLW

Co-Chairs: **Paul Bredt**, *PNNL*; **William Wilmarth**, *Savannah River National Laboratory*

Lead Organizer: **William Wilmarth**, *SRNL*

Add'l Organizers: **Vijay Jain**, *Savannah River*

*Remediation*; **Larry Ling**, *Savannah River Remediation*

Paper Reviewer: **Larry Ling**, *SRR*

#### 3:20 Hanford Site Tank Waste Classification - 14217

*Brian Esparza, Gene Ramsey, Martin Wheeler, Washington River Protection Solutions*

#### 3:45 Remediation of the Active Liquid Waste Tanks at Chalk River Laboratories, AECL - 14339

*Meggan Vickard, Gerard Peplinski, Atomic Energy of Canada Limited (Canada); Mark Polley, Perma-Fix Environmental Services, Inc.*

#### 4:10 Forensic Investigation of Hanford Double-Shell Tank AY-102 Radioactive Waste Leak - 14178

*Dennis Washenfelder, Washington River Protection Solutions*

#### 4:35 Hanford Double-Shell Tank Extent-of-Condition Construction Review - 14174

*Theodore Venetz, Jason Gunter, Kayle Boomer, Dennis Washenfelder, Washington River Protection Solutions; Travis Barnes, BNL Technical Services; Jeremy Johnson, US DOE*

## Session 117

1:30 PM - 3:10 PM

Room 102A

### HLW Retrieval, Closure and Processing Operational Experience

Co-Chairs: **Sharon Marra**, *SRNL*; **Gene Ramsey**, *Washington River Protection Solutions*

Lead Organizer: **Sharon Marra**, *SRNL*

Add'l Organizers: **Jonathan Bricker**, *Savannah River*

*Remediation, LLC*; **John Gregory**, *AREVA Fed. Svcs*

Paper Reviewer: **John Gregory**, *AREVA Fed. Services*

#### 1:35 World Premiere Industrial Vitrification of High Level Liquid Waste Produced by Uranium/Molybdenum Fuel Reprocessing in La Hague's Cold Crucible Melter - 14035

*Régis Didierlaurent, AREVA NC; Eric Chauvin, Christian Mesnil, Catherine Veyer, AREVA; Jean Francois Hollebecque, Jacques Lacombe, Olivier Pinet, CEA Marcoule (France)*

**2:00 Retrieval and Conditioning of Legacy Radioactive Sludge from the Effluent Treatment Facility at La Hague Plant - 14456**  
*Frederic Chambon, Eric Tchemitcheff, AREVA Federal Services, LLC; Gregoire Lemiere, AREVA (France); Tahn Zanife, Pascal Giavarini, Nathalie Segond, AREVA NC (France); Christophe Bordeaux, AREVA NP SAS (France)*

**2:25 Completion of Operational Closure of Tank 5F and Tank 6F by Grouting Including the First Time Grouting of Cooling Coils Associated Annulus - 14312**  
*Gregory Arthur, Andrew Tisler, SRR, LLC*

### Session 118

**3:15 PM - 5:00 PM Room 102A**

#### Waste Form Development, Demonstration, and Characterization

Co-Chairs: **Vijay Jain**, *Savannah River Remediation*; **Terry Sams**, *Washington River Protection Solutions*  
Lead Organizer & Paper Reviewer: **Sharon Marra**, *Savannah River National Laboratory*  
Add'l Organizers: **Jonathan Bricker**, *Savannah River Remediation*; **John Gregory**, *AREVA Federal Services, LLC*; **Christian Ladirat**, *CEA Marcoule (France)*

**3:20 Design Principles for Optimizing Nuclear Waste Glass Formulation for Industrial Implementation - 14107**  
*Eric Chauvin, Anthony Prod'homme, Catherine Veyer, Eric Boudot, Badia Amekraz, Nolwenn Chouard, AREVA; Olivier Pinet, Jean-Luc Dussossoy, Christian Ladirat, CEA Marcoule (France)*

**3:45 Radioactive Demonstration of Mineralized Waste Forms Made from Hanford Low Activity Waste (Tank SX-105 and AN-103) by Fluidized Bed Steam Reformation (FBSR) - 14317**  
*Carol Jantzen, Charles Crawford, Christopher Bannochie, Paul Burket, Alex Cozzi, Gene Daniel, Connie Herman, Charles Nash, Donald Miller, David Missimer, Savannah River National Laboratory*

**4:10 Low Temperature Waste Form for Supplemental Immobilization of Hanford Low Activity Waste - 14232**  
*Paul Cavanah, David Swanberg, Washington River Protection Solutions; Joseph Westsik, Pacific Northwest National Laboratory; Alex Cozzi, Savannah River National Laboratory*

**4:35 A Summary of International Models of Glass Behavior over Geologic Time Scales - 14385**  
*Joseph Ryan, Pacific Northwest National Laboratory*

### Session 119

**1:30 PM - 5:00 PM Room 106A**

#### Transport Subsequent to Storage

Co-Chairs: **Paul Jones**, *DeNuke Contracting Services, Inc.*; **Karlan Richards**, *Bechtel National, Inc*  
Lead Organizer: **Kent McDonald**, *PNNL*  
Add'l Organizers: **Larry Harmon**, *Project Enhancement Corporation*; **Karlan Richards**, *Bechtel National, Inc.*  
Paper Reviewer: **Paul Jones**, *DeNuke Contracting Svcs*

**1:35 Cask Assembly Level Modeling to Determine Used Nuclear Fuel Assembly Loading Environments Resulting from Normal Conditions of Rail Transport - 14511**  
*John Bignell, Gregg Flores, Douglas Ammerman, Sandia National Laboratories*

**2:00 Assembly Level Modeling and Transportation Damage Prediction of Used Nuclear Fuel (UNF) Cladding - 14569**  
*Harold Adkins, Jr, PNNL; Scott Sanborn, Brian Koeppel, Nicholas Klymyshyn, Kenneth Geelhood, Pacific Northwest National Laboratory*

**2:25 Damaged Irradiated Nuclear Fuel; Development of Transport and Intermediate Storage Solutions - 14613**  
*Anna Wikmark, Studsvik Nuclear AB (Sweden)*

**2:50 Reversal Bending Fatigue Testing on Zry-4 Surrogate Rod - 14503**  
*Jy-An Wang, Hong Wang, Bruce Bevard, Robert Howard, Oak Ridge National Laboratory*

**3:20 Detailed PWR Fuel Rod and Grid Finite Element Analysis to Provide Equivalent Rod Stiffness and Damping and Equivalent Grid Shell Thickness to PWR Used Nuclear Fuel (UNF) Assembly - 14525**  
*Justin Coleman, Robert Spears, INL*

**3:45 Toil and Trouble: Recommendation for the Preparation of the DOE National Transportation Plan - 14450**  
*Fred Dilger, Black Mountain Research; Bob Halstead, State of Nevada; James Ballard, California State University*

**4:10 An Integrated Approach to the Technical Development and Procurement of the UK's Intermediate Level Waste Containers - 14195**  
*Jason Dean, John-Patrick Richardson, NNL (United Kingdom); John Collins, INL*

**4:35 Russian Research Reactor Spent Nuclear Fuel Repatriation from the Reactor Country to the Russian Federation for Reprocessing - 14149**  
*Karel Svoboda, František Sviták, Josef Podlaha, UJV Rez, a.s. (Czech Republic)*

## Session 120

1:30 PM - 3:10 PM Room 106B

### Experiences in ER of Radioactively and Chemically Contaminated Sites in Urban and Suburban Areas

Co-Chairs: **Ella Feist**, CH2MHILL; **Nelson Walter**, AMEC

Lead Organizer: **Leo van Velzen**, NRG-Arnhem (Netherlands)

Add'l Organizers: **Ella Feist**, CH2MHILL; **Robert Vellinger**, TerranearPMC, LLC; **Nelson Walter**, AMEC

Paper Reviewer: **Nelson Walter**, AMEC

#### 1:35 Emergency Response Planning for Urban Remediation Project - 14392

**Paul Jung**, Rebecca Scarborough, Kevin Andrews, Lawrence Colburn, Adam Hibbard, Severson Environmental Services, Inc.

#### 2:00 From Nuclear/Fossil Fuel Research Facility to Redevelopment - 14498

**Eugene Shephard**, Heath Downey, Nelson Walter, AMEC; Keith Knauerhase, Combustion Engineering, Inc.

#### 2:25 Challenges and Successes during Implementation of Residential Soil Remediation Program - 14567

**Libby Bowen**, AMEC

#### 2:50 Radionuclide Contamination from the 1940s in a New York City Park - 14518

**Carl Young**, Cabrera Services, Inc.

## Session 121

3:15 PM - 5:00 PM Room 106B

### Sustainable Green Remediation Processes

Co-Chairs: **Lori Fritz**, Mission Support Alliance; **Jennifer MacDonald**, US DOE Sustainability Performance Office

Lead Organizer: **Susan Walter**, AECOM

Add'l Organizers: **Lori Fritz**, Mission Support Alliance; **Moses Jaraysi**, CH2M HILL PRC

Paper Reviewer: **Sara Austin**, CHPRC

#### 3:20 Policy Perspective: Meeting the Challenge of Sustainability - 14603

**Jennifer C. MacDonald**, US DOE

#### 3:45 Increasing Energy Efficiency Through Innovative Delivery Methods - 14144

**Darcy Immerman**, **Anthony Roner**, AECOM

#### 4:10 Hanford: Meeting the Challenge to Divert Wastes from Traditional Landfill Disposal - 14376

**Jennifer Ollero**, **Ann Shattuck**, Lori Fritz, Mission Support Alliance

#### 4:35 Zero Waste and Maximum Fun: How 2,800 People Used Sustainable Practices and Made CHPRC History - 14209

**Sara Austin**, CHPRC

## Session 122

1:30 PM - 3:10 PM Room 106C

### Community Engagement and Capacity Building Approaches for Agencies, Practitioners & the Public

Co-Chairs: **John Dalton**, NDA (United Kingdom); **Margaret MacDonell**, Argonne National Laboratory

Lead Organizer: **Margaret MacDonell**, Argonne National Laboratory

Add'l Organizers: **Elizabeth Bowers**, Consultant; **Linda Suttora**, US DOE

Paper Reviewer: **W.T. (Sonny) Goldston**, EnergySolutions

#### 1:35 Centralized Used Fuel Resource for Information Exchange - 14656

**Joshua Jarrell**, Devin White, Oak Ridge National Laboratory

#### 2:00 National Analytical Management Program (NAMP) Education and Training in Radiochemistry via Public Webinars - 14027

**Patricia Paviot**, US DOE; Mansour Akbarzadeh, Nuclear Waste Partnership (NWP), LLC; Berta Oates, Portage Inc.; John Griggs, US EPA

#### 2:25 International Training to Support the Environmental Remediation of Sites Contaminated with Radioactive Materials - 14604

**Robert Johnson**, Lawrence Boing, Charley Yu, Pamela Richmond, Lisa Durham, **Karen Smith**, Argonne National Laboratory; Peter Booth, Hylton Environmental (United Kingdom); Horst Monken Fernandes, Patrick O'Sullivan, International Atomic Energy Agency (Austria); Steve Meiners, Tricord; Eugene Jablonowski, US EPA; Brian Cooper, John Canar, USEPA Region 5

## Session 123

3:15 PM - 5:00 PM Room 106C

### Workplace Management and Performance Solutions

Co-Chairs: **Jessica Calhoun**, *Savannah River Remediation (SRR)*; **Laurie Ford**, *Critical Path Mgmt.*  
Lead Organizer: **W.T. (Sonny) Goldston**, *EnergySolutions*  
Add'l Organizer & Paper Reviewer: **Laurie Ford**, *Critical Path Management*

- 3:20 Management School of Hard Knocks - The Deepest Learning** - 14122  
*Christi Leigh*, *Sandia National Laboratories*
- 3:45 Workplace Management: Performance is a Deliverable** - 14231  
*Laurie Ford*, *Critical Path Management*
- 4:10 Lifecycle Management for Environmental Remediation Projects** - 14084  
*Peter Booth*, *Hylton Environmental (United Kingdom)*
- 4:35 Advancing Cultural Change through Communications** - 14428  
*Sonya Johnson*, *CH2M HILL PRC*

## Session 124

1:30 PM - 2:40 PM Room 101B

### Radiological Dispersion Devices and other Nuclear Weapons of Mass Destruction: Detection, Response, Decontamination and Recovery

Co-Chairs: **Kim Auclair**, *KD Auclair & Assoc., LLC*; **Julia Whitworth**, *IAEA (Austria)*  
Lead Organizer & Paper Reviewer: **Kim Auclair**, *KD Auclair & Assoc., LLC*

- 1:35 Irreversible Wash Aid Additive for Mitigation of Urban, Radioactive Contaminations** - 14328  
*Michael Kaminski*, *Carol Mertz*, *Nadia Kivenas*, *Argonne National Laboratory*
- 2:00 Integrating Decontamination Strategies into a Waste Estimation Support Tool for Radiological Incidents** - 14324  
*Paul Lemieux*, *Daniel Schultheisz*, *Thomas Peake*, *US EPA*; *Colin Hayes*, *Eastern Research Group, Inc.*; *Timothy Boe*, *Oak Ridge Institute for Science and Education*

## Session 125

2:45 PM - 4:35 PM Room 101B

### Non Radiological Characterization for LLW, ILW, MW, NORM and TENORM

Co-Chairs: **Frazier Bronson**, *Canberra Industries Inc - AREVA Group*; **Heinz Kroeger**, *TÜV NORD EnSys Hannover (Germany)*  
Lead Organizer: **Frazier Bronson**, *Canberra Industries Inc - AREVA Group*  
Add'l Organizers: **Loong Yong**, *Spectra Tech, Inc.*  
Paper Reviewer: **Heinz Kroeger**, *TÜV NORD EnSys Hannover*

- 2:50 Waste Management Lessons Learned from the Paducah C-340 Metals Reduction Complex D&D** - 14300  
*Myrna Redfield*, *Brad Montgomery*, *LATA Environmental Services of Kentucky*; *Robert Seifert*, *US DOE*
- 3:15 Properties of Tc(I) Tricarbonyl Derivatives Relevant to Hanford Tank Waste Supernatants** - 14352  
*Tatiana Levitskaia*, *Brian Rapko*, *Syandev Chatterjee*, *Mathew Edwards*, *Sergei Sinkov*, *Reid Peterson*, *Pacific Northwest National Laboratory*
- 3:40 Measurement and Modelling of Legacy Sludge Separation and Transport Processes** - 14250  
*Timothy Hunter*, *Michael Fairweather*, *Steven Freear*, *Jeff Peakall*, *Simon Biggs*, *Hugh Rice*, *David Cowell*, *University of Leeds*; *David Burt*, *MMI Engineering Ltd*; *Geoff Randall*, *Sellafield Ltd (United Kingdom)*
- 4:05 In-Situ Characterization of Mobilization, Dispersion and Re-Settling in Impinging Jet Ballast Tanks with an Acoustic Backscatter System** - 14097  
*Jaiyana Bux*, *Timothy Hunter*, *Neepa Paul*, *Jeff Peakall*, *Simon Biggs*, *University of Leeds*; *Jonathan Dodds*, *Dominic Rhodes*, *National Nuclear Laboratory (United Kingdom)*

## Session 126

1:30 PM - 5:00 PM

Room 101C

### Crosscutting Performance Assessments, Risk Management and Modeling

Co-Chairs: **Kevin Brown**, *Vanderbilt University / CRESPI*; **Ming Zhu**, *US DOE*

Lead Organizer: **Ming Zhu**, *US DOE*

Add'l Organizers: **Kim Auclair**, *KD Auclair & Assoc.*

Paper Reviewer: **Kevin Brown**, *Vanderbilt University*

#### 1:35 Development of a Dimensionless Number to Assess Risk for LLW Disposal Facilities - 14585

**Joseph Rustick**, *David Kosson, Steven Krahn, James Clarke, Vanderbilt University; Michael T. Ryan, US NRC*

#### 2:00 Advanced Simulation Capability For Environmental Management Initial User Release - 14134

**Mark Freshley**, *Tim Scheibe, Vicky Freedman, Pacific Northwest National Laboratory; Susan Hubbard, Haruko Wainwright, Stefan Finsterle, Carl Steefel, Lawrence Berkeley National Laboratory; David Moulton, Paul Dixon, Los Alamos National Laboratory; Greg Flach, Roger Seitz, Savannah River National Laboratory; Justin Marble, US DOE*

#### 2:25 Understanding the Impact of Model Assumptions on Estimating Constituent Leaching during Disposal of Cementitious Waste Forms - 14382

**Kevin Brown**, *Joshua Arnold, Vanderbilt University/CRESPI; Hans van der Sloot, Hans van der Sloot Consultancy (Netherlands); David Kosson; Johannes Meeussen, Nuclear Research and Consultancy Group*

#### 2:50 Probabilistic Risk Assessment for the Design and Operation of a Radioactive Waste Disposal Facility - 14617

**Thilo von Berlepsch**, *Ramon Gasull Anguera, Enrique Biurrun, DBE Technology GmbH (Germany)*

#### 3:20 Coupled Vadose Zone/Saturated Zone Models for Nearfield Analyses - 14289

**Charles Hostetler**, *Elkhart Environmental, LCC; Margaret Preston, Shea Nelson, Leidos; Mary Burandt, US DOE*

#### 3:45 The Effects of Site Complexity on Model Performance – Long-term Groundwater Performance Assessment - 14292

**Charles Hostetler**, *Elkhart Environmental, LCC; Margaret Preston, Shea Nelson, Leidos; Mary Burandt, US DOE*

## Session 127

1:30 PM - 5:00 PM

Room 104AB

### Panel: US DOE Featured Site: Lexington, KY Office (Portsmouth & Paducah Sites)

Co-Chairs: **William Murphie**, *US DOE*; **Lisa Burns**, *Energy and Waste Management Consultant*

Lead Organizer & Panel Reporter: **Lisa Burns**, *Energy and Waste Management Consultant*

This panel features US DOE's Portsmouth/Paducah Project Office (PPPO), which is responsible for management and cleanup at the Portsmouth, Ohio and Paducah, Kentucky former Gaseous Diffusion Plant sites. Portsmouth is focused on initial phases of D&D of the plant – principally legacy structures and disposition of process gas equipment. Paducah is focused on soil and groundwater remediation while negotiating the change in operational status of the USEC-leased enrichment facilities and preparing for future D&D. Both sites are ramping up production at their DUF6 conversion plants. US DOE recently announced negotiations for potential continued use of selected Paducah facilities and sale of some of its DUF6 inventory.

**Panelists include:** **Vince Adams**, *Director, US DOE Portsmouth Site*; **Dennis Carr**, *Site Project Director, Fluor B&W Portsmouth (FBP)*; **Mark Duff**, *Program Manager, LATA KY Paducah* and **Kent Fortenberry**, *Chief Engineer, B&W Conversion Services (BWCS)*.

## Sessions Related to Specific Topics

### Featured Nations – Sweden/Finland

1, 3, 7, 13, 14, 21, 26, 30, 36, 41, 43, 45, 46, 47, 50, 60, 62, 75, 90, 94, 97, 98, 102, 103, 106, 109, 114, 119, 122

### Fukushima

20, 35, 43, 47, 65, 71, 77, 81A, 84, 99, 112

### Contracting

*(All Exhibitors can attend these sessions)*

1, 29b, 52a, 68, 69

### Performance Assessments

5, 23, 24, 29A, 30B, 40, 43, 46B, 58, 60, 61, 67, 72, 75, 83, 85, 86, 94

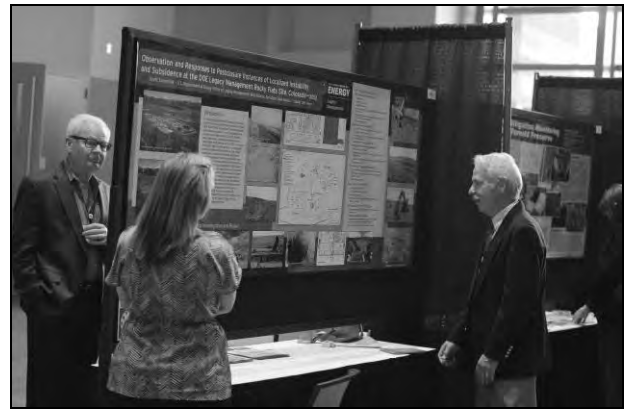
# POSTER SESSIONS

Be sure to visit the technical posters located on the first floor near the technical sessions. In this informal atmosphere, Poster Presenters become discussion leaders sharing their ideas and visions.

And for the first time, posters will be displayed in the Exhibit Hall, see the schedule below.

In order to honor high quality presentations, the American Nuclear Society (ANS) presents an award for the Best Poster/Paper and the American Society of Mechanical Engineers (ASME) also provides an award.

Judges select the winners based on technical quality and preparation of the work as well as attendee votes.



Be sure to turn in your vote by session, one hour before the session ends. Each track selects the best poster/paper which are then displayed and re-judged on Wednesday afternoon for the Best of the Conference.

The Best of the Conference for this year's conference will be presented at next year's conference. The WM2013 Best of the Conference awards will be presented at the Honors & Awards Luncheon on Tuesday.

## Poster Session Schedule and Author Attendance at Poster – First Floor Foyer

Session #		Poster Period	Authors present -First Period-	Authors present -Second Period-	Poster Set-up	Poster Removal
<b>MONDAY, MARCH 3, 2014</b>						
Afternoon	HLW, ST: 30	<b>1:30–5 pm</b>	1:30–2 pm	4–5 pm	1-1:30 pm	5–5:30 pm
<b>TUESDAY, MARCH 4, 2014</b>						
Morning	LLW/NPP/P&T: 46, 47 & 48	<b>8:30 am–12 pm</b>	8:30–9 am	11 am–12 pm	8–8:30 am	12–12:30 pm
Afternoon	ER/CE&T/SP: 65, 66 & 67	<b>1:30–5 pm</b>	1:30–2 pm	4–5 pm	1–1:30 pm	5–5:30 pm
<b>WEDNESDAY, MARCH 5, 2014</b>						
Morning	D&D: 81	<b>8:30 am–12 pm</b>	8:30–9 am	11 am–12 pm	8–8:30 am	12–12:30 pm
Afternoon	Non-Paper: 98	<b>1:30–5 pm</b>	1:30–2 pm	4–5 pm	1–1:30 pm	5–5:30 pm

## Optional Poster Display Schedule and Author Attendance – Exhibit Hall

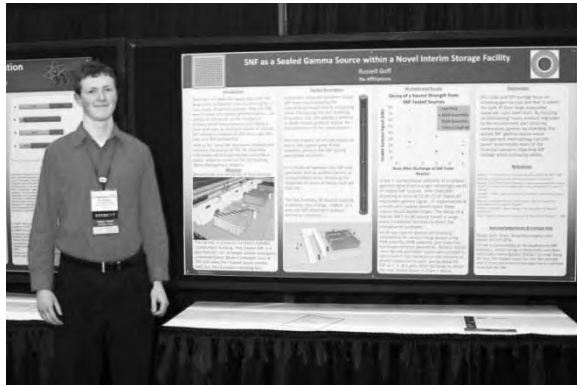
Session #	Optional Display Time	Authors present	Poster Set-up	Poster Removal
<b>MONDAY, MARCH 3, 2014 – TUESDAY, MARCH 4, 2014</b>				
D&D: 81 and ER/CE&T/SP: 65, 66 & 67	<b>12:30 pm Monday through Tuesday 11:30 am</b>	5:30 – 6 pm Monday	11 am – 12:30 pm Monday	12 – 12:30 pm Tuesday
<b>TUESDAY, MARCH 4, 2014 – WEDNESDAY, MARCH 5, 2014</b>				
LLW/NPP/P&T: 46, 47 & 48 and HLW, ST: 30	<b>2:00 pm Tuesday through Wednesday 1:00 pm</b>	5:30 – 6 pm Tuesday	1 pm – 2:00 pm Tuesday	1 – 1:30 pm Wednesday*



# Student Poster Competition – Session 31

Be sure to visit the Student Posters session on Monday, February 25<sup>th</sup> in the Exhibit Hall and vote for your selection for Best Student Poster.

Students will display their posters on Monday, March 3 from 1:30 pm – 5:00 pm in the Exhibit Hall. Judging will conclude at 5:00 pm and the winner will be announced at the Tuesday, March 4 Honors & Awards Luncheon. The winner will receive \$500 CASH. All posters will remain on display through Wednesday, March 5 at 1:30 pm.



**Russell Goff**, Oregon State University (USA) won the WM2013 Student Poster Competition with his poster titled:

***"Turning Spent Nuclear Fuel Rods into Sealed Gamma Sources for Safe and Economical Interim Storage"***.

- S1. The Virtue of Flux Measurements during Hydraulic Tomographic Surveys in Highly Layered Aquifer Systems - 14670**  
*Chak Hau Michael Tso, University of Arizona*
- S2. Detecting Fracture Connectivity in a Nuclear Waste Deposit Site using Hydraulic Tomography – 14672** *Yuanyuan Zha, University of Arizona*
- S3. Ultrasonic Transducers for Structural Health Monitoring of Nuclear Waste Containment Units – 14673** *Andrew Suprock, Bernhard Tittmann, Pennsylvania State University*
- S4. Molten Salt Oxidation of Organic Radioactive Waste - 14128**  
*Andrew Akin, New Mexico Tech; Petr Kovarik, Research Centre Rez Ltd. (Czech Republic)*
- S5. Design Options for Delaying Long Term Iodine Emissions from a Canadian High Level Radioactive Waste Repository. Authors: Daryn Cressy, Mitchell Hines, Gerrit Huesing, Dr. Brian Ikeda, University of Ontario Institute of Technology (Canada)**
- S6. Microcosm Study on Mineralogical changes of post Molasses Injection with Savannah River Site (SRS) F-area Sediments.** *Valentina Padilla (DOE Fellow), Yelena Katsenovich, Applied Research Center, Florida International University (FIU)*
- S7. Innovative High-Level Waste Pipeline Unplugging Technologies for Hanford Site (Asynchronous Pulsing) -** *Alexandra Fleitas (DOE Fellow), Applied Research Center, FIU*
- S8. Rapid Imaging of Settled Solids in Hanford HLW Staging Tanks -** *Dayron Chigin (DOE Fellow), Applied Research Center, FIU*
- S9. Computational Simulation and Evolution of High-Level Waste Pipeline Plugs -** *Deanna M. Moya (DOE Fellow), Applied Research Center, FIU*
- S10. US Low Level and Mixed Low Level Waste Treatment Technology Identification -** *Gabriela Vazquez (DOE Fellow), Applied Research Center, FIU*

# Student Poster Competition – Session 31

- S11. Analysis of Life Expectancy for Waste Transfer Lines Located at Hanford Site** - Jennifer Arniella (DOE Fellow), *Applied Research Center, FIU*
- S12. Investigation of Permanent and Removable Coatings for Decontamination of Savannah River Site (SRS) Plutonium Fuel Form Facility** - Mariana Evora (DOE Fellow), *Applied Research Center, FIU*
- S13. Computational Fluid Dynamics Simulations of Fluid Transients in a Pipeline at Hanford Site-** Michael Abbott (DOE Fellow), *Applied Research Center, FIU*
- S14. Display of Contaminated Locations at Oak Ridge site using ArcGIS** - Michelle Embon (DOE Fellow), *Applied Research Center, FIU*
- S15. A Study of Cell Viability on DOE Hanford Soil Isolates: Effect of U (VI) and Bicarbonate** - Paola Sepulveda-Medina (DOE Fellow), *Applied Research Center, FIU*
- S16. Native Android Application for Deactivation & Decommissioning Technologies** - Pedro Cordon (DOE Fellow), *Applied Research Center, FIU*
- S17. Performance Evaluation of Mobile Applications with Deactivation & Decommissioning (D&D) Technology Services** - Chandrashekar Gama Deshika Swamy (FIU Graduate Student), *Applied Research Center, FIU*
- S18. Characterization of the Uranium-Bearing Products of Novel Remediation Technologies** - Robert Lapierre (DOE Fellow), *Applied Research Center, FIU*
- S19. Design and Development of Geographical Information System (GIS) Map for DOE Waste Streams** - Sandhya Appunni (FIU Graduate Student), *Applied Research Center, FIU*
- S20. GPU Accelerated Lattice-Boltzmann Method for Fluid Flows in Nuclear Waste Tanks at Hanford Site** - Sasha Philius (DOE Fellow), *Applied Research Center, FIU*
- S21. Development of REST Services for Populating ESRI's ArcGIS Spatial Modeling Applications** - Steve Noel (DOE Fellow), *Applied Research Center, FIU*
- S22. U(VI) Bioreduction via Molasses-based Reagent Injection** - Valentina Padilla (DOE Fellow), *Applied Research Center, FIU*
- S23. Engineering Scale Pipeline Unplugging Testing Using the Improved Peristaltic Crawler System for Removal of High Level Waste Plugs at Hanford Site Pipelines** - Carmela Vallalta (DOE Fellow), *Applied Research Center, FIU*
- S24. The Effects of Silica and Humic Acid on U(VI) Removal from Savannah River Site (SRS) F/H Area Groundwater** - Joel McGill (DOE Fellow), *Applied Research Center, FIU*
- S25. Environmental Remediation Optimization: Cost Savings, Footprint Reduction, and Sustainability Benchmarked on DOE Sites** - Natalia Duque (DOE Fellow), *Applied Research Center, FIU*

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*Session in bold followed by the Paper Number*

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Sunday, March 2, 2014 5:00 PM – 8:00 PM (*Opening Welcome Reception*)  
Monday, March 3, 2014 8:30 AM – 6:30 PM (*International Reception 5 PM – 6:30 PM*)  
Tuesday, March 4, 2014 9:00 AM – 6:30 PM (*Best of Finland & Sweden Reception 5 PM – 6:30 PM*)  
Wednesday, March 5, 2014 9:00 AM – 1:30 PM (*Luncheon/Booth Prize Drawings 12 PM – 1:30 PM*)

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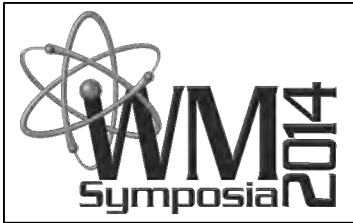
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121	Leidos	601	American Crane & Equipment Corp
133	Forschungszentrum Jülich GmbH	602	The New York Blower Company
133	Eckert & Ziegler Umweltdienste GmbH	603	NukeWorker.com
133	BIG Entsorgungstechnologien GmbH	604	Project Services Group, LLC
201	Westinghouse Electric Company	605	Container Products Corporation
217	ITD USA	606	Spectra Tech Inc.
223	NUVIA	608	Pajarito Scientific Corporation
225	Avero	609	Diversified Technologies Services, Inc.
227	TWI Ltd	610	NuVision Eng/Mid Columbia Engineering
301	Canberra Industries	611	Robatel Technologies, LLC
317	Tri-State Motor Transit Co.	614	US DOE - Office of EM
319	Siempelkamp Nuclear Services, Inc.	615	The S.M. Stoller Corporation
321	Energy, Tech. & Enviro. Business Assn	617	Attention IT, Inc.
322	Container Technologies Industries, LLC	618	INTERA Incorporated
324	Eastern Technologies, Inc.	619	Tru-Motion Products, Inc.
325	Banda Group International, LLC	620	ENERCON Services Inc.
326	RussTech Language Services, Inc.	621	Arc-Tronics, Inc.
327	ALS Environmental	623	UltraTech International, Inc.
401	AREVA	629	Tioga Pipe Supply Company, Inc
407	Columbiana Hi Tech	632	General Plastics Manufacturing Co
409	Metal Solutions Design & Fabrication	634	NETZSCH Instruments North America
411	Perma-Fix Environmental Services, Inc.	635	Visionary Solutions, LLC
417	AMEC	700	Hot Cell Services
418	US DOE NV Field Office	701	Studsvik
421	Barnhart Nuclear Services	702	James Fisher Technologies
422	Nuclear Safety Associates	704	UniTech Services Group, Inc.
424	Pillsbury Law	705	ECC
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431	Navarro Research and Engineering, Inc.	714	ATI
433	CAST Transportation	715	ARS International, LLC
501	Pentek, Inc.	717	NFT
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506	Thermo Fisher Scientific	719	ABW Technologies, Inc.
508	ResinTech, Inc.	721	Skolnik Industries Inc
509	NAC International	722	Tetra Tech
511	Aerotek, Inc.	723	PaR Systems, Inc.
517	EQ - The Environmental Quality Co	731	Major Tool & Machine, Inc.
519	Wastren Advantage, Inc.	732	American DND, Inc.
521	Ceradyne, Inc., a 3M company	733	Applied Research Center
522	Cutting Edge Services Corporation	735	Campbell Scientific
526	Reef Industries, Inc.	800	US Ecology
528	Marks Brothers, Inc.	801	EnergySolutions
530	North Wind, Inc.	804	GEL Laboratories, LLC
534	Nuclear Waste Partnership LLC	806	PlantDecommissioning.com
535	Westerman Companies	808	Longenecker & Associates, Inc.
		810	NUCON International, Inc.
		811	Kurion
		814	ISO Pacific Nuclear Assay Systems, Inc.



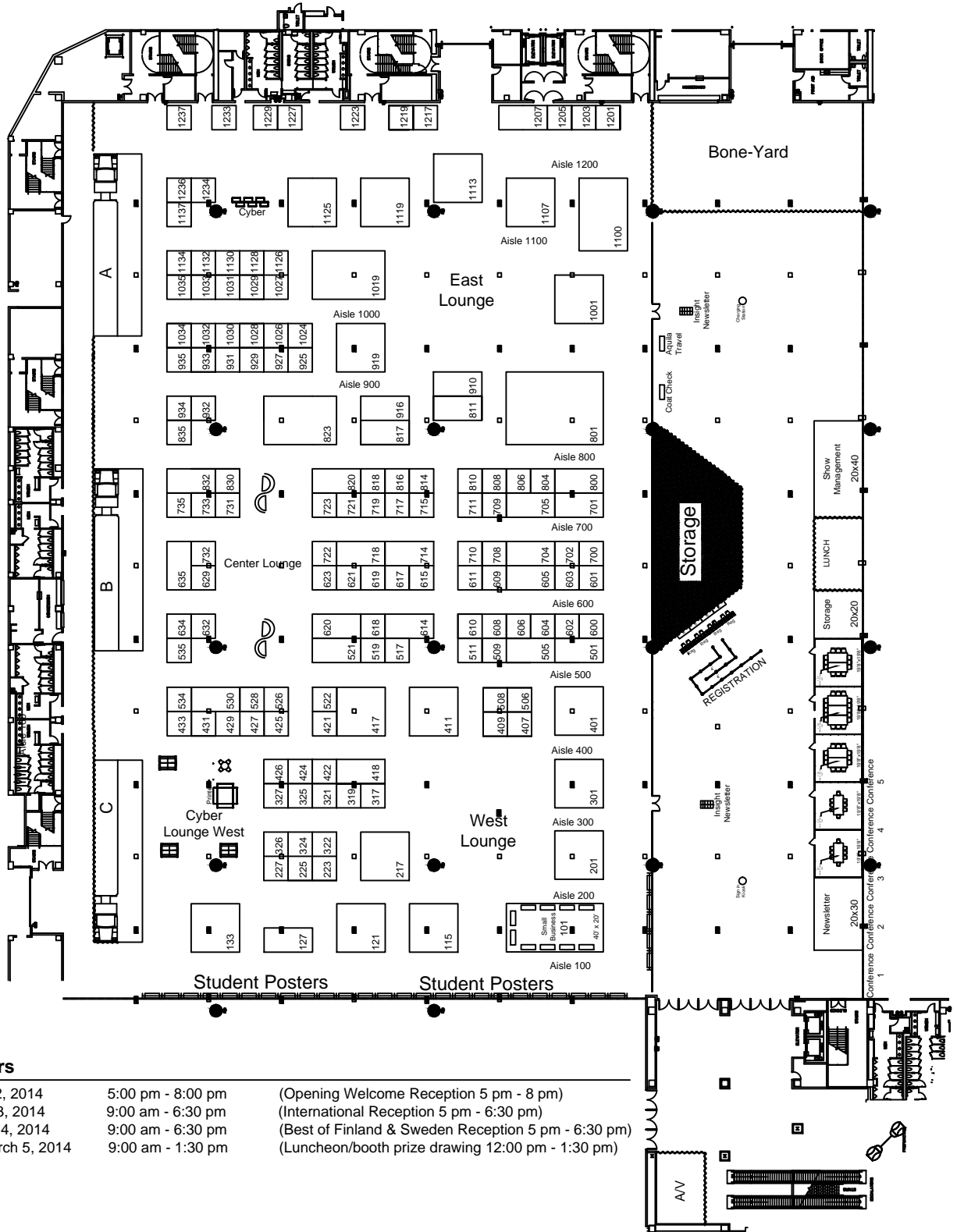




# WM2014 Conference

## March 2 - 6, 2014

### Phoenix Convention Center West Building Hall 4



#### Exhibit Hours

Sunday March 2, 2014	5:00 pm - 8:00 pm	(Opening Welcome Reception 5 pm - 8 pm)
Monday March 3, 2014	9:00 am - 6:30 pm	(International Reception 5 pm - 6:30 pm)
Tuesday March 4, 2014	9:00 am - 6:30 pm	(Best of Finland & Sweden Reception 5 pm - 6:30 pm)
Wednesday March 5, 2014	9:00 am - 1:30 pm	(Luncheon/booth prize drawing 12:00 pm - 1:30 pm)

# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

## **ABW Technologies, Inc.**

Contact: Aimee Faulkes Booth#: 719  
6720 191st Pl NE, Arlington, WA 98223  
P: 360-618-4416 F: 360-618-4444  
Email: aimee.faulkes@abwtec.com  
Website: www.abwtec.com

ABW Technologies specializes in custom metal fabrication and systems integration for the Nuclear Industry. ABW is experienced in Shipping Packages, Gloveboxes, Mechanical Equipment and Vessels. ABW's mature NQA-1 Program and reputation for excellence, makes them the preferred fabricator for clients nationwide.

## **Aerotek, Inc.**

Contact: Kristen Caswell Booth#: 511  
7301 Parkway Dr, Hanover, MD 21076  
P: 410-694-5160  
Email: kcaswell@aerotek.com  
Website: www.aerotek.com

Aerotek Government Services serves government agencies, integrators and contractors with talent management, program support and managed services solutions. Whether you are meeting cyclical or surge demands or require additional personnel for entry level to senior staff positions, Aerotek can help you execute programs and tasks almost anywhere in the world.

## **Aaron Nuclear Services**

Contact: Scott Eckler Booth#: 1126  
2138 State Rte 18, Wampum, PA 16157  
P: 724-535-5777 F: 724-535-1165  
Email: patricia.roush@veolia.com  
Website: www.veoliaes.com

Aaron Nuclear Services is a subsidiary of Veolia ES Technical Solutions. Aaron provides a complete range of services to companies engaged in the nuclear marketplace. Services include, but are not limited to: Pump and Motor Refurbishment, Decontamination, Service Level I Coatings, Waste Handling, Facility Access, Contaminated Equipment Storage and Special Projects.

## **Alliant Corporation**

Contact: Matt Frost Booth#: 1029  
320 N Cedar Bluff Rd, Ste 200  
Knoxville, TN 37923  
P: 865-934-2222 F: 865-769-0946  
Email: mfrost@alliantcorp.com  
Website: www.alliantcorp.com

Alliant Corporation, a service-disabled veteran owned small business, provides professional services in the areas of Environmental/Waste Management, Safety and Health, and Project Controls. Industries supported by Alliant include construction, remediation, manufacturing, and

power/utilities. Clients benefiting from Alliant's support include DOE, the USACE, NASA, TVA, Fluor, URS, CB&I, Bechtel, B&W, and CH2M Hill.

## **ALS Environmental**

Contact: Katie Wells Booth#: 327  
1317 S 13th Ave, Kelso, WA 98626  
P: 360-501-3278  
Email: katie.wells@alsglobal.com  
Website: www.alsglobal.com

At ALS Environmental, we are able to offer an extensive lineup of analytical testing services to clients in various industries across the United States. With more than 20 laboratories and service centers throughout the country, we have the resources to fulfill all environmental testing requirements. We are accredited nationwide and our high-quality laboratories offer services such as well, drinking, and waste-water testing, air testing, industrial hygiene testing and consultation, sediment and tissue testing, dioxin and furan testing, and more!

## **AMEC**

Contact: Wendy Parker Booth#: 417  
502 W Germantown Pike, Ste 850  
Plymouth Meeting, PA 19462  
P: 484-366-4714 F: 610-828-6700  
Email: wendy.parker@amec.com  
Website: www.AMEC.com

From landmark remediation programs to local waste management projects, AMEC's interdisciplinary team develops and implements integrated solutions that incorporate innovative technologies to address complex radiological, hazardous, and multimedia contamination challenges. AMEC helps clients move projects through cleanup and regulatory compliance to environmental excellence, adding a sustainability focus to our services to maximize benefits for mankind and the local / regional ecology. As one of the largest engineering, project management and consultancy firms in the world, AMEC operates in nearly 40 countries through a network of 270 locations from the Australian outback to the Arctic.

### ***Women of Waste Management (WoWM)***

#### ***Panel & Networking Event***

***Tuesday, March 4, 2014***

***6:00 PM, 212BC***

***Last year, nearly 170 men and women, came to hear our speakers share their experiences as professional women and leaders in the industry. Don't miss it!***

# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

## **American Crane & Equipment Corporation**

Contact: Lisa Walleigh Booth#: 601  
531 Old Swede Rd, Douglassville, PA 19518  
P: 610-385-6061 x224 F: 610-385-3191  
Email: lwalleigh@americancrane.com  
Website: www.americancrane.com

American Crane & Equipment Corporation is a leading provider of cranes, hoists, manipulators, and specialized lift systems. Customers include commercial nuclear plants, DOE facilities, DOE laboratories, and defense facilities. American Crane's recent focus has been supplying cranes and replacement trolleys/hoists for dry spent fuel storage and radioactive waste remediation. Critical lift cranes having enhanced crane control features are also being supplied for material handling of critical equipment. American Crane has an ASME NQA-1 and 10CFR50, Appendix B QA Program and maintains a full-time service department with capabilities to perform crane mechanical and controls upgrades. American Crane has the in-house capabilities to provide all the cranes needed for new nuclear power plant construction.

## **American DND, Inc.**

Contact: Bill Schaab Booth#: 732  
PO Box 533, Grand Island, NY 14072  
P: 866-699-5515 F: 716-773-5515  
Email: bschaab@americandnd.com  
Website: www.AmericanDND.com

American DND performs SAFE Environmental Remediation, Demolition & Nuclear Decommissioning. As a Service Disabled Veteran (SDV) and Small Business (SB) we also help Clients comply with Diversity and set-aside Programs. Our Management Team possess extensive "Lessons Learned" from performing over \$600M of D-N-D Work at over 500 projects over the past 30 years. Radiological Decommissioning projects have been performed at Savannah River Site, West Valley (currently working), Yankee Nuclear Facilities, Oakridge Plants, Fernald, Rocky Flats, DOE, DOD, & USACE Projects. American DND is ready to help with the toughest of your D-N-D Projects.

## **American Fabrication**

Contact: Terrell Detrick Booth#: SB Pavilion  
2517 W Omni Dr, Idaho falls, ID 83402  
P: 208-522-1361 F: 208-525-8299  
Email: terrell@americanfabrication.com  
Website: americanfabrication.com

Manufacturing & fabrication of pressure vessels, tanks, structures, heat exchangers. Certified in NQA-1, ASME, ISO:9001, and API.

## **American Society of Mechanical Engineers**

Contact: Chris Mahler Booth#: 1128  
2 Park Ave, New York, NY 10016  
Email: mahlerc@asme.org

ASME is a not-for-profit professional organization that enables collaboration, knowledge sharing and skill development across all engineering disciplines, while promoting the vital role of the engineer in society. ASME is introducing a new program for the nuclear industry. The NQA-1 Certification program is intended to strengthen and recognize an organizations quality assurance program when in compliance with the ASME NQA-1 standard. It provides a high level of confidence to a purchaser that a supplier will have the knowledge and resources to meet and implement a quality assurance program in compliance with the ASME NQA-1 standard.

## **ANTECH Corporation**

Contact: Robin McKay Booth#: 710  
9050 Marshall Ct, Westminster, CO 80031  
P: 303-430-8184 F: 303-430-8215  
Email: robin@antechcorp.com  
Website: www.antech-inc.com

ANTECH designs and supplies assay equipment for measuring LLW and TRU waste and for safeguards measurements. ANTECH also provides on-site measurement services for LLW and TRU waste drums and boxes and for decontaminating and decommissioning TRU gloveboxes so that they can then be measured and disposed of as LLW.

## **Applied Research Center**

Contact: Walter Quintero Booth#: 733  
10555 W Flager St, EC 2100, Miami, FL 33174  
P: 305-348-5012  
Email: quinterw@fiu.edu  
Website: www.fiu.edu

Florida International University's Applied Research Center is a university based research center located in Miami, Florida. Since 1995, ARC has supported DOE's environmental restoration mission by conducting applied research in key DOE-EM's technical areas such as Decontamination & Decommissioning, Waste Processing, and Soil & Groundwater. In 2007, DOE and FIU established the DOE-FIU Science & Technology Workforce Development Program; this unique program is designed to develop a pipeline of minority scientists and engineers students (called DOE Fellows) specifically trained and mentored to join federal or private sector workforce.

# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

## **Arc-Tronics, Inc.**

Contact: Michael Goering Booth#: 621  
1150 Pagni Dr., Elk Grove Village, IL 60007  
P: 847-437-0211 F: 847-437-0181  
Email: michaelg@arc-tronics.com  
Website: www.arc-tronics.com

Arc-Tronics, Inc. is a full-service Electronic Manufacturing Services (EMS) provider for turnkey products in printed circuit board assembly, cable/harness assembly, and complete box build or higher level integration with facilities located in Elk Grove Village, IL. The company is ISO 9001:2008, ISO 13485:2003, and AS9100 Rev. C certified. Arc-Tronics is also an ITAR registered company.

## **AREVA**

Contact: Jan Phillips Booth#: 401  
7207 IBM Dr, Charlotte, NC 28262  
P: 704-805-2405 F: 434-382-6590  
Email: janice.phillips@areva.com  
Website: www.us.areva.com

AREVA Federal Services - one company, many solutions. AREVA provides its customers with solutions for low-carbon power generation in North America and all over the world. As the leader in nuclear energy and a significant, growing player in the renewable energies sector, AREVA combines U.S. and Canadian leadership, access to worldwide expertise and a proven track record of performance. Sustainable development is a core component of AREVA's strategy. Its more than 5,000 U.S. and Canadian employees work every day to make AREVA a responsible industrial player helping to supply ever cleaner, safer and more economical energy to the greatest number of people.

## **Argonne National Laboratory**

Contact: Candace Smith-Stigberg Booth#: 425  
9700 S Cass Ave, Lemont, IL 60439  
P: 630-252-6118 F: 630-252-4517  
Email: mallon@anl.gov

Research and Development Laboratory for the Department of Energy

## **ARS International, LLC**

Contact: Kimberly Jack Booth#: 715  
2609 N River Rd, Port Allen, LA 70767  
P: 225-381-2991 F: 225-381-2996  
Email: kbrewer@amrad.com  
Website: www.amrad.com

ARS International, LLC is an Alaskan Native Corporation, Small Disadvantaged Business offering the following services: Environmental Remediation Services, Analytical Services, Mobile Laboratory Services, Demolition / Deactivation / Decontamination Services, Health Physicist

Services, Hazardous Waste Management Services, Field Sampling Services, as well as additional environmental services.

## **ATI**

Contact: Cheryl Botti Booth#: 714  
1300 Pacific Ave, Technical and Commercial Center  
Natrona Heights, PA 15065  
P: 724-226-6433  
Email: Cheryl.Botti@ATImetals.com  
Website: www.ATImetals.com

Allegheny Technologies Incorporated is one of the largest and most diversified specialty metals producers in the world with revenues of approximately \$4.1 billion. ATI has approximately 9,600 full-time employees world-wide who use innovative technologies to offer global markets a wide range of specialty metals solutions. Our major markets are aerospace and defense, oil and gas/chemical process industry, electrical energy, medical, automotive, food equipment and appliance, and construction and mining. Our products include titanium and titanium alloys, nickel-based alloys and superalloys, engineered forgings and castings, zirconium, hafnium, niobium alloys, grain-oriented electrical steels, and stainless and specialty steels.

## **Attention IT, Inc.**

Contact: Jeanice Pratt Booth#: 617  
1704 Schaeffer Rd, Knoxville, TN 37932  
P: 865-769-8888 ext. 400 F: 865-769-8931  
Email: jeanice@attentionit.com  
Website: www.attentionit.com

The eMWaste® Primary Suite is the only web-based COTS software that tracks hazardous, radioactive and mixed waste. eMWaste® provides electronic "cradle to grave" tracking of profiles, container certification, characterization, inventory, processing, treatment, overpack, shipping, and disposal operations. All this while keeping a full historical record of container movements, processes, parent/daughter processes, and shipping disposition of the container. eMWaste® is composed of nine suites and offers LIMS, Processor, Disposition, Document Control, Dispatch, Project Management, and Contract Management to our customers.

## **Avantech**

Contact: James Braun Booth#: 929  
95-A Sunbelt Blvd., Columbia, SC 29203  
P: 803-407-7171 F: 803-407-7125  
Email: jbraun@avantechinc.com  
Website: www.avantechinc.com

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## **Avero**

Contact: Oleg Mansurov Booth#: 225  
Obuedng Kanal Emb, 14  
Saint-Petersberg, 192019 Russian Federation  
P: +7 985 163 9292 F: +7 812 449 7361  
Email: info@decommissioning.en

## **AZZ | NLI**

Contact: John Portillo Booth#: 1219  
7410 Pebble Drive, Fort Worth, TX 76054  
P: 817-284-0077 F: 817-590-0484  
Email: johnportillo@azz.com  
Website: www.azz.com/nli

NLI is a supplier of equipment, service, and engineering support to the nuclear industry. Located in Fort Worth, TX, NLI offers products and services that minimize the engineering impact to nuclear facilities. We accomplish this with an engineering department that is one-fourth of our more than 200 person staff.

With a 200,000 sq.ft. manufacturing facility and roughly 35 vendor alliances, NLI provides a wide array of electrical, I&C, and mechanical products under its 10CFR50 Appendix B QA Program and ASME III N-Stamp. NLI is the largest "under one roof" equipment supplier solely focused on the nuclear industry.

## **Babcock & Wilcox Technical Services Group**

Contact: Stephanie Decker Booth#: 1125  
13024 Ballantyne Corporate Pl, Ste 700  
Charlotte, NC 28277  
P: 704-625-4777  
Email: sadecker@babcock.com  
Website: www.babcock.com

Babcock & Wilcox Technical Services Group, Inc. (B&W TSG), a subsidiary of The Babcock & Wilcox Company, provides a variety of services including uranium processing, environmental site restoration, and management and operating services to the U.S. Department of Energy (DOE) and National Nuclear Security Administration. B&W TSG's principal operations include: managing and operating nuclear production facilities; managing and operating environmental management sites; managing spent nuclear fuel and transuranic waste; and providing critical skills and resources for DOE sites.

## **Banda Group International, LLC**

Contact: Elisionia Valle Booth#: 325  
1799 E. Queen Creek Rd, Ste 1  
Chandler, AZ 85286  
P: 480-636-8734 F: 480-718-7890  
Email: Elisioniav@bandagroupintl.com  
Website: www.bandagroupintl.com

EHS Technical and Construction Project Management support services company serving government and private sector clients across the United States and internationally.

Received numerous awards for Environment Health and Safety (EHS) support, including minority supplier awards from major private sector corporations and government agencies.

## **Barnhart Nuclear Services**

Contact: Rick Thornton Booth#: 421  
10686 Westwood Ave, Fairhope, AL 36532  
P: 901-775-3000  
Email: rthornton@barnhartcrane.com  
Website: www.barnhartcrane.com

Barnhart's team of experts has backgrounds from the nuclear industry. Barnhart has the kind of innovative design and execution that reduces Critical Path and reduces a project overall costs. Barnhart has built an impressive nuclear project resumé.

## **BIG Entsorgungstechnologien GmbH**

Contact: Hubert Strobe Booth#: 133  
Im Farchet 13 1/2, Bad Tolz, 83646 Germany  
P: 49-8041-78770 F: 49-8040-1822  
Email: info@big-pressen.de  
Website: www.big.pressen.de

BIG Entsorgungstechnologien GmbH is experienced for more than 20 years in planning, designing and manufacturing machines and plants for conditioning low and intermediate level waste for longtime storage or final disposal. Our equipment and services cover processes as cutting or shearing, sorting, compaction, handling systems, design studies and on-site services.

## **Boston Government Services, LLC**

Contact: Harry Boston Booth#: SB Pavilion  
2532 Jones Rd, Lenoir City, TN 37771  
P: 202-262-8098  
Email: hboston@BGS-LLC.com  
Website: www.BGS-LLC.com

Boston Government Services (BGS) BGS is a mission support company for federal programs and facilities. BGS provides Technical and Engineering Services; Information Management and Security; and Management Support for government programs and government contractors. BGS professionals have senior level experience in complex, secure, and highly regulated environments. We leverage this experience and understanding to deliver services and support tailored to the needs of each client. Our expertise allows us to effectively integrate the key service areas that provide the foundation for Mission

# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

Support. Our solutions cross-cut management systems to maximize value to the mission.

## **Brokk, Inc.**

Contact: Tony Marlow Booth#: 115  
1144 Village Way, Monroe, WA 98722  
P: 505-699-8923  
Email: tmarlow@brokkinc.com  
Website: www.brokk.com

Brokk heavy duty remotely controlled machines are used worldwide in many challenging applications including; D&D, demolition, remote surveys, size reduction, sorting/handling radioactive waste. The operators complete multiple tasks at safe distances from high radiation or hazardous environments. Our machines feature remotely interchangeable attachments and can be customized to meet specific project requirements.

## **Burns & McDonnell Engineering Company**

Contact: Willie Clark III Booth#: 817  
9400 Ward Pkwy, Kansas City, MO 64114  
P: 202-731-0190 F: 816-822-3517  
Email: wclark@burnsmcd.com  
Website: www.burnsmcd.com

Burns & McDonnell has a solid reputation of providing comprehensive turnkey services to federal, institutional, and commercial facilities worldwide. During our 116 year history, Burns & McDonnell has acquired extensive experience working with government agencies, DOE Contractors, the Corps of Engineers and other DOD agencies, giving us a thorough knowledge of processes, procedures and requirements needed for successful project completion. Burns & McDonnell's professional staff is dedicated to providing quality services in an economical and timely fashion. Because Burns & McDonnell is 100% employee-owned, our staff has a vested interest in the firm's success, which translates into responsive, expert service for our clients. We remain dedicated to safety, quality, customer service, and meeting budgets and schedules. Burns & McDonnell ranks 20th on Engineering News-Record's 2013 list of the Top 500 Design Firms and has earned an outstanding reputation for controlling costs, providing high-quality work and meeting scheduled deadlines. Our stated mission is to "Make Our Clients Successful"!

## **Cabrera Services Inc.**

Contact: Shannan Ryll Booth#: 916  
473 Silver Ln, East Hartford, CT 6118  
P: 860-569-0095 F: 860-569-0277  
Email: sryll@cabreraservices.com  
Website: www.cabreraservices.com

Cabrera is the trusted integrator for radiological remediation and munitions response solutions. We

bring world-class expertise in health physics, radioactive and mixed waste management, and munitions response along with a broad-scope NRC license to solve our client's toughest challenges.

## **Campbell Scientific**

Contact: Lynne Ruiz Booth#: 735  
815 W 1800 N, Logan, UT 84321  
P: 435-227-9000 F: 435-227-9001  
Email: lruiz@campbellsci.com  
Website: www.campbellsci.com

Campbell Scientific manufactures rugged, reliable instrumentation for measurement and control. Our low power requirements allow for automated data collection and transmission in harsh environments and remote locations. Applications include monitoring weather, soil water, water level and quality, slope stability, and research.

## **Canberra Industries**

Contact: Tammy Pattison Booth#: 301  
800 Research Pkwy, Meriden, CT 6450  
P: 800-243-3955 F: 203-235-1347  
Email: tammy.pattison@canberra.com  
Website: www.canberra.com

Canberra is the leading supplier of innovation and cost-effective nuclear measurement solutions and services used to maintain safety of personnel, assess the health of nuclear facilities and safeguard the public and the environment. Applications for Canberra offerings include health physics, nuclear power operations, Radiation Monitoring Systems (RMS), nuclear safeguards, nuclear waste management, environmental radiochemistry and other areas.

## **CAST Transportation**

Contact: Al Wetsch Booth#: Semi C,433  
9850 Havana St, Henderson, CO 80640  
P: 303-534-6376 F: 303-853-3377  
Email: awetsch@casttrans.com  
Website: www.casttrans.com

CAST Transportation is a motor carrier handling Heavy Haul, Hazmat, LL Waste, Flatbed, Lowboy & Chemical Tanker movements. CAST operates a Rail Transload Center from its tracks on the BNSF at Irondale Station (Denver, CO). Participant in the WIPP Program and has been a privately held company since 1948.

***Student Poster Competition - Session 31  
Monday, March 3, 2014  
1:30 PM – 5:00 PM  
Exhibit Hall***

***Be sure to visit the Student Posters session  
and vote for your selection  
for Best Student Poster.***

# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

## **CB&I**

Contact: Megan Faunce Booth#: 832  
4117 Essen Ln, Baton Rouge, LA 70809  
P: 225-987-7051  
Email: Megan.faunce@cbi.com  
Website: www.cbi.com

CB&I and Shaw have joined forces to offer a world of solutions to our customers in the energy, natural resources, environmental and infrastructure markets. Drawing upon more than a century of experience and the expertise of approximately 50,000 employees worldwide, CB&I provides reliable solutions while maintaining a relentless focus on safety and an uncompromising standard of quality.

## **CBI Polymers**

Contact: Lindsay Hoover Booth#: SB Pavilion  
PO Box 847, Carmel Valley, CA 93924  
Email: lhoover@alchemyglobalcapital.com

CBI Polymers provides the most advanced cleantech decontamination technology for the remediation of a wide range of surface contaminants, including radiological, chemical and industrial waste, PCBs, heavy metals and mold.

Our flagship product, DeconGel™, fundamentally shifts the traditional cleaning paradigm by allowing for highly effective, waterless remediation at dramatically lower total project costs.

DeconGel has applications in a broad range of industry sectors including commercial nuclear, decontamination and decommissioning, defense, maritime, chemical and manufacturing, and mining and metals, as well as in general facilities management.

## **Ceradyne, Inc., a 3M company**

Contact: Sandi Rushin Booth#: 521  
3250 S 614 Rd, Quapaw, OK 74363  
P: 918-673-2201 F: 918-673-1052  
Email: sjrushin@mmm.com  
Website: www.ceradyne.com

Ceradyne, Inc., a 3M company, provides BORAL®, BorAluminum®, Enriched Iron Boride and BoroBond® for wet and dry SNF storage, fresh fuel transport, neutron absorption, waste remediation and shielding. Strong technical expertise and ability to supply the Boron 10 isotope provides Ceradyne a unique position for fuel cycle and waste stream management.



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## **CH2M HILL, Inc.**

Contact: Bill Badger Booth#: 823  
9191 S Jamaica St, Englewood, CO 80112  
P: 720-286-5632 F: 720-286-9090  
Email: william.badger@ch2m.com  
Website: www.ch2m.com

CH2M HILL specializes in the operations and management of complex nuclear programs and projects around the globe. CH2M HILL provides innovative clean up, environmental remediation and closure solutions for commercial and government nuclear facilities and sites in the US, UK, and Canada, while safely delivering projects ahead of schedule and under budget.

## **COH Inc.**

Contact: Gilles Lafleur Booth#: 708  
801 Curé Boivin, Boisbriand, QC Canada  
P: 514-770-6500 F: 450-430-6611  
Email: glafleur@coh.ca Website: www.coh.ca

COH Inc. is a leader in the design, manufacturing, installation and service of custom overhead equipment used in the most severe and demanding lifting, handling and positioning applications where enhanced safety by means of either single-failure proof features or seismic design may be required. Operating since 1969, COH is highly recognized for the outstanding quality and reliability of its engineered products in the nuclear, automotive, cement, hydropower, aluminum and steel industries. In the nuclear industry, COH provides electric wire rope hoists, electric overhead and gantry traveling cranes for fuel handling systems, cask handling (inside or outside of the power plant), turbine handling and radiation exposed high precision lifting equipment for research facilities. COH with its extensive engineering department encompassing civil, mechanical, electrical, instrumentation and programming disciplines also specializes in existing crane certification and refurbishment programs. COH is a wholly owned subsidiary of the REEL Group recognized as one of the world's key leader in the design, manufacture and maintenance of lifting, handling and positioning equipment for the global nuclear industry.

## **Columbiana Hi Tech**

Contact: Laura Alamillo Booth#: 407  
1802 Fairfax Rd, Greensboro, NC 27407  
P: 336-852-5679  
Email: lalamillo@chtnuclear.com  
Website: www.chtnuclear.com

Columbiana Hi Tech (CHT) is a leading manufacturer and designer of nuclear fuel cycle packaging. CHT is the world's largest manufacturer of front-end radioactive packaging



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and a major fabricator of containers and related products to transport and store spent nuclear fuel.

## **Container Products Corporation**

Contact: Mike Lewis Booth#: 605  
112 N College Rd, Wilmington, NC 28405  
P: 910-392-6100 F: 910-392-6778  
Email: quality@c-p-c.com  
Website: www.c-p-c.com

Container Products Corporation has been providing containers, compactors and decontamination equipment to the nuclear industry since February, 1981. CPC is the largest and most experienced producer of LLW containers in the United States and its compactors and decontamination equipment are located throughout the world.

## **Container Technologies Industries, LLC**

Contact: Mike Fielden Booth#: 322  
375 Marcum Pkwy, Helenwood, TN 37755  
P: 423-569-2800 x24  
Email: mfielden@ctifab.com  
Website: www.containertechnologies.com

Small Business Metal Fabricator located in a Hub Zone in East Tennessee. Over 400 designs of sizes and shapes for metal containers, pallets, racks, cradles, structures, buildings, and custom designed metal fabrications.

## **CRL**

Contact: Danielle Schlackman Booth#: 1223  
691 N. Squirrel Rd, Ste 250  
Auburn Hills, MI 48326  
P: 248-836-6673  
Email: dschlackman@destaco.com  
Website: www.centres.com

Central Research Laboratories (CRL) researches, designs and manufactures machines and systems which allow human operators to safely perform dexterous maneuvers in hazardous, "unfriendly," or sterile environments through teleoperation. CRL products are operating in 25 free-world countries employing nuclear technology, are used worldwide by pharmaceutical manufacturers utilizing isolator technology, and by NASA for research in satellite servicing.

## **Cutting Edge Services Corporation**

Contact: Tim Beckman Booth#: 522  
1535 Old SR 74, Batavia, OH 45103  
P: 513-388-0199 F: 513-732-1248  
Email: beckman@cuttingedgeservices.com  
Website: www.cuttingedgeservices.com

Cutting Edge Services provides engineered solutions for the cutting or drilling of concrete and metal structures. We design and fabricate special tools to augment our nuclear field services,

including diamond wire cutting of SG sections and solid turbine shafts, diamond drilling of bioshield walls and water powered pole saw cutting of steel in pools.

## **Dade Moeller**

Contact: Krista Alley Booth#: 910  
1835 Terminal Dr, Ste 200  
Richland, WA 99354  
P: 509-942-3638 F: 509-946-4412  
Email: krista.alley@moellerinc.com  
Website: www.moellerinc.com

Dade Moeller provides a full range of professional and technical services to Federal, state and commercial clients in support of nuclear, radiological, and environmental operations. With 11 locations nationwide, our staff is recognized for expertise and proven performance in radiation/nuclear services, occupational safety, environmental protection, and safety training.

## **DAHER-TLI**

Contact: Lauren Haas Booth#: Semi A  
8161 Maple Lawn Blvd, Ste 450  
Fulton, MD 20759  
P: 301-421-4324 F: 301-421-4326  
Email: lhaas@tliusa.com  
Website: www.tliusa.com

DAHER-TLI, the North American Nuclear subsidiary of DAHER, provides turnkey solutions to the front and back-end sectors of the nuclear fuel cycle. DAHER designs and provides products and services based on its comprehensive portfolio of expertise: Engineering, Packaging, Transport and Logistics, Waste Treatment, Characterization, Volume Reduction, etc.

DAHER is a tier-1 equipment supplier to the high-technology industries. Created in 1863, DAHER is an international group present in 12 countries across the world, which generated a turnover of over 1.3 billion dollars in 2013.

## **Diversified Metal Products, Inc.**

Contact: Matt Darrington Booth#: 1031  
3710 N Yellowstone Hwy  
Idaho Falls, ID 83401  
P: 208-529-9655 F: 208-529-9836  
Email: mattd@diversifiedmetal.com  
Website: www.diversifiedmetal.com

Custom Metal Fabricator specializing in Nuclear Waste fabrications.

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## **Diversified Technologies Services, Inc.**

Contact: Jim Mooney Booth#: 609  
2680 Westcott Blvd, Knoxville, TN 37932  
P: 865-539-9000 x111 F: 865-539-9001  
Email: jmooney@dts9000.com  
Website: www.dts9000.com

DTS provides systems and services to manage and process low-level radioactive and hazardous wastes. Technologies include demineralization, polymer solidification, filtration, ultrafiltration, reverse osmosis, dewatering, and drying. These are applied on a stand-alone basis, or combined to effect waste stream or pool cleanup, sludge collection, silica removal, boric acid recovery, and zero environmental release. DTS also provides underwater systems, ion exchange and ion specific media, and NOCHAR filtration products.

## **Dufrane Nuclear Shielding, Inc.**

Contact: Noelle Brooks Booth#: 1233  
125 Price Rd, Winsted, CT 6098  
P: 860-379-2318 F: 860-379-2325  
Email: nbrooks@dufrane.com  
Website: www.Dufrane.com

A pioneer in the industry of radiation shielding and radioactive material handling, Dufrane is NQA-1 Compliant and ISO-9001-2008 Certified. We have dedicated decades of research, design, fabrication, installation, engineering, and manufacturing expertise in providing you with new solutions in custom fabrication from a wide range of products. A recent addition to our Fabrication capabilities is our in-house capability of designing and building electro-magnetics, coils, transformers and various electrical components for a wide range of industries.

## **Eastern Technologies, Inc.**

Contact: Benjamin McWaters Booth#: 324  
215 2nd Ave, Ashford, AL 36312  
P: 334-899-4351 F: 334-899-2310  
Email: bmcwaters@orex.com  
Website: www.orex.com

Eastern Technologies Incorporated (ETI) is uniquely positioned to provide solutions to all your protective clothing needs. With the continued advancement of our OREX line of protective clothing and related products, ETI also has the ability to provide state of the art single use garments the far exceed industry standard. The revolutionary OREX Ultra coveralls have made possible historically low personnel contaminations at several nuclear power plants over the past 12 months. ETI also operates the most technologically advanced radiological laundry in the world.

## **ECC**

Contact: Rosanna Darro Booth#: 705  
1240 Bayshore Hwy, Burlingame, CA 94010  
P: 650-347-1555  
Email: RDarro@ecc.net  
Website: www.ecc.net

Since 1985, ECC has been solving complex environmental problems in the US and abroad. ECC provides comprehensive and cost-effective design-build, construction, engineering, environmental remediation, closure, energy, O&M, and munitions response services. With more than 500 professionals and 17 offices worldwide, we secure and complete a variety of large-scale, multi-faceted concurrent projects, providing our customers with optimal solutions.

## **Eckert & Ziegler Umweltdienste GmbH**

Contact: Thomas Sicker Booth#: 133  
Gisele 1, Braunschweig 38110 Germany  
P: 49-5307-932452 F: 49-5307-932295  
Email: Thomas.sickert@ezag.com  
Website: www.ezag.com

Eckert & Ziegler Umweltdienste GmbH Germany (Environmental Services) offers comprehensive services for collection, recycling and disposal of sealed radioactive sources and all relevant process steps for treatment and conditioning of low activity radioactive waste from hospitals, research institutes and nuclear power industry.

## **Edgen Murray Corporation**

Contact: Kelsey Bondelid Booth#: 1217  
5801-A Orr Rd, Charlotte, NC 28213  
P: 704-596-5872  
Email: kelsey.bondelid@edgenmurray.com  
Website: www.edgenmurray.com

Edgen Murray is one of the largest suppliers of high performance piping and specialized steel products in the world and one of only a few with a complete nuclear program. As an ASME Material's Organization, Edgen Murray Nuclear Operations has access to a significant global stocking platform and multiple manufacturer relationships to provide a solution driven approach to meeting client's project management and quality expectations. Through more than 30 locations worldwide, Edgen Murray's inventory position and purchasing power serves as a foundation to the supply of safety - related and nuclear quality material enabling performance to demanding delivery schedules and specification requirements on a broad range of products. Compliance with: 10 CFR 50 App B, ASME Section III, NQA-1, plus more.

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## **ENERCON Services Inc.**

Contact: Corey DeWitt                      Booth#: 620  
4490 Old William Penn Hwy  
Murrysville, PA 15668  
P: 724-733-8711 x223 F: 724-325-6383  
Email: cdewitt@enercon.com  
Website: www.enercon.com

With 25 offices nationwide and 1 office internationally, ENERCON is the premier nuclear utility engineering and licensing firm in the United States and one of the Top 140 largest environmental consulting firms in the country. An employee-owned company, our culture drives us to provide superior customer service as individual owners. Combining this culture and these services, ENERCON has an outstanding reputation of providing superior support to our commercial and government clients in a wide variety of services including: engineering; decommissioning planning and execution; environmental remediation and consulting; radiologic and industrial health and safety; licensing and permitting; and facility siting and construction.

## **Energy, Technology and Environmental Business Association**

Contact: Linda Short                      Booth#: 321  
PO Box 5483, Oak Ridge, TN 37831  
P: 865-591-8776                      F: 865-922-5169  
Email: linda@eteba.org  
Website: www.eteba.org

The Energy Technology and Environmental Business Association (ETEBA) is a non-profit trade association representing more than 250 small, large and mid-sized companies that provide environmental, technology, energy, engineering, construction and related services to government and commercial clients. Our mission is to promote the success of our members by fostering market understanding, identifying business opportunities and advocating for our common interests.

## **EnergySolutions**

Contact: Mark Walker                      Booth#: 801  
423 W 300 S, Ste 200  
Salt Lake City, UT 84101  
P: 801-649-2194                      F: 801-413-5684  
Email: mwalker@energysolutions.com  
Website: www.energysolutions.com

EnergySolutions is a leading provider of specialized technology based nuclear services to government and commercial customers. We are committed to environmental protection, energy independence and the nuclear industry. Our services include engineering, in-plant operations, outsourced specialty services, spent nuclear fuel management, decontamination and decommissioning, logistics, transportation processing and disposal.

## **Entellic Corporation**

Contact: Duane Wilton                      Booth#: 934  
3001 Mountain View Ave, Yakima, WA 98901  
P: 509-529-4201  
Email: duane.wilton@entellic.com  
Website: www.entellic.com

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## **Environmental Rail Solutions, Inc.**

Contact: David Ardito                      Booth#: 925  
621 Shrewsbury Ave, Ste 152  
Shrewsbury, NJ 07702  
P: 732-212-8140                      F: 732-212-8141  
Email: dardito@envrail.com  
Website: www.envrail.com

Environmental Rail Solutions, Inc. (ERS) is a recognized leader in the transportation of hazardous, non-hazardous and radioactive material and has transported over 1.5 million tons of material utilizing the safe and efficient rail infrastructure as the primary mode of transportation. As a women owned small business, ERS is an approved government contractor and has met the rigid qualification and performance standards of the DOE, DOD and USACE.

## **EQ - The Environmental Quality Company**

Contact: Amy Jo Haratyk                      Booth#: 517  
36255 Michigan Ave, Wayne, MI 48184  
P: 734-329-8055                      F: 800-592-5329  
Email: amyjo.haratyk@eqonline.com  
Website: www.eqonline.com

EQ is a fully-integrated environmental management services organization with over 50 years of experience. EQ creates environmental solutions for customers by managing and disposing of FUSRAP waste, NORM and TENORM. Along with a full line of environmental services, EQ also offers hazardous and non-hazardous waste recycling, treatment, disposal and wastewater treatment.

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## **Fluor Corp**

Contact: Katy Alley Booth#: 1019  
100 Fluor Daniel Dr, HP02A, Greenville, SC 29607  
P: 864-281-6026  
Email: [katy.alley@fluor.com](mailto:katy.alley@fluor.com)  
Website: [www.fluor.com](http://www.fluor.com)

For over 60 years, Fluor has been a trusted U.S. Government contractor, a legacy that goes back to the Manhattan Project in the 1940s. Fluor's major government clients include the Departments of Energy, Defense, Homeland Security, and Labor. Our services to the government include large program management, environmental management/remediation, base operations and maintenance, contingency response, IT infrastructure, rapid deployment/mobilization, heavy equipment sourcing, and comprehensive life cycle services.

## **Forschungszentrum Jülich GmbH Germany**

Contact: Klaus Hoppstock Booth#: 133  
Wilhelm-Jonen-Str.  
Juelich, North Rhine Westphalia 0 Germany  
P: +49(0)2461 61 3296 F: +49(0)2461 61 2118  
Email: [k.hoppstock@fz-juelich.de](mailto:k.hoppstock@fz-juelich.de)  
Website: [fz-juelich.de](http://fz-juelich.de)

One of Europe's largest interdisciplinary research centers. Its mission is to do research and to develop technologies in the fields science, materials, health and safety, energy and climate, as well as information technologies. It hosts the German product quality control office for radioactive waste (PKS) providing expertise for the conditioning, disposal and safety to German governmental authorities fulfilling their national waste management tasks.

## **GE Hitachi Nuclear Energy**

Contact: Gregg Schneider Booth#: 1026  
3901 Castle Hayne Rd., Wilmington, NC 28401  
P: 770-906-7376  
Email: [gregg.schneider@ge.com](mailto:gregg.schneider@ge.com)

GE Hitachi Nuclear Energy (GEH) and Hitachi GE Nuclear Energy (HGNE) are world-leading providers of advanced reactor technology, nuclear fuel and services. Created by GE and Hitachi to serve the global nuclear industry, the global nuclear alliance executes a single, strategic vision to create a broader portfolio of solutions, expanding its capabilities for new reactor and service opportunities. The alliance offers customers around the world the technological leadership required to effectively enhance reactor performance, power output and safety.

## **GEL Laboratories, LLC**

Contact: Bob Seyer Booth#: 804  
9111 Cross Park Dr, Ste D200  
Knoxville, TN 37923  
P: 865-599-1175 F: 865-470-4091  
Email: [bobseyer@mindspring.com](mailto:bobseyer@mindspring.com)  
Website: [www.gel.com](http://www.gel.com)

Founded in 1981, our client base includes some of the largest industrial manufacturers in the Southeast, 72 US commercial nuclear sites, fifteen Department of Energy sites, thirteen Army Corps of Engineer (USACE) Districts, the US Navy and Air Force. GEL provides these clients with customized analytical chemistry services including environmental monitoring, RI/FS, RCRA investigation, NPDES analysis, hazardous and mixed waste characterization, bioassay, decommissioning and remediation closure analysis. Additionally, we perform full Part 61 and Energy Solutions Clive characterization services on samples with contact doses rates up to 600 mR/hr.

## **General Plastics Manufacturing Company**

Contact: Rick Brown Booth#: 632  
4910 Burlington Way, Tacoma, WA 98409  
P: 253-473-5000 F: 253-473-5104  
Email: [rick\\_brown@generalplastics.com](mailto:rick_brown@generalplastics.com)  
Website: [www.generalplastics.com](http://www.generalplastics.com)

General Plastics Manufacturing Company's FR-3700 crash and fire protection foams are recognized by specifying agencies as being one of the best solutions for the protection of hazardous payloads. The FR-3700 formulation is designed to allow predictable impact-absorption performance under dynamic loading, while providing an intumescent char layer that insulates and protects hazardous materials, even when exposed to pool-fire conditions.

## **GoldSim Technology Group LLC**

Contact: Rick Kossik Booth#: 818  
22500 SE 64th Pl, Ste 240, Issaquah, WA 98027  
P: 425-295-6985 F: 425-642-8073  
Email: [OAdministrator@goldsim.com](mailto:OAdministrator@goldsim.com)  
Website: [www.goldsim.com](http://www.goldsim.com)

GoldSim is the premier tool for carrying out probabilistic performance assessments of proposed and existing radioactive waste management sites, and is used by over 400 organizations worldwide. GoldSim supports decision and risk analysis by simulating future performance while quantitatively representing the uncertainty and risks inherent in all complex systems.

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## **Gulf Coast Environmental Systems**

Contact: George Newkirk Booth#: SB Pavilion  
1689 Hawthorne Dr., Conroe, TX 77301  
P: 832-476-9024 F: 855-301-9672  
Email: gnewkirk@gcesystems.com  
Website: www.gcesystems.com

Gulf Coast Environmental Systems (GCES) specializes in the design and manufacture of Pollution Control Equipment (oxidizers, carbon systems, wet scrubbers), Industrial Ovens, and Services worldwide. Each piece of equipment is specifically designed to meet your environmental requirements and efficiency needs.

## **Hot Cell Services**

Contact: Zbigniew Tomalik Booth#: 700  
PO Box 5729, 22626 85th Pl S  
Kent, WA 98064  
P: 253-854-4945 F: 253-854-4947  
Email: weingibz@hotmail.com  
Website: www.hotcell.com

Hot Cell Services is the worldwide leader in safe viewing solutions for the Nuclear and Medical Industries. We manufacture Radiation Shielding Windows, Glove Box Windows, Lead Glass Slabs and Bricks, Radiation Gaskets and supplies. We offer lifetime support of our products with Engineering, Consulting, Extraction, Installation, Maintenance, Refurbishment, Inspection and Diagnosis services.

## **HukariAscendent, Inc.**

Contact: Ken Hukari Booth#: 426  
4251 Kipling St, Ste 400, Wheat Ridge, CO 80033  
P: 303-384-9079 F: 303-277-1458  
Email: ken@hukari.com  
Website: www.hukari.com

HukariAscendent is a service disabled Vietnam veteran-owned small business providing quality engineering, technical, and professional support services to the government and commercial nuclear science and technology industry. Specializing in Nuclear Safety, Licensing, and Engineering, we support the nuclear industry with our capabilities covering the complete nuclear life cycle (new reactor and non-reactor facilities, operating plants, decontamination, decommissioning, and demolition), and our people have the experience and depth to address the most difficult challenges. The HukariAscendent network provides access to over 5,000 engineers and industry professionals with multiple years of nuclear related experience making us a recognized leader in this industry.

## **I.C.E. Service Group, Inc.**

Contact: Dennis Morgan II Booth#: 1119  
192 Ohio River Blvd, Ste 100, Ambridge, PA 15003  
P: 724-266-7580 F: 724-266-7583  
Email: dmorgan@iceservicegroup.com  
Website: www.iceservicegroup.com

ICE provides packaging, transportation, logistical support and waste management services for both commercial and government clients. We utilize a multi-modal approach utilizing rail, truck and marine conveyances. ICE specializes in handling low level radioactive waste, RCRA hazardous waste, TSCA and non-hazardous waste. Our Site Services Group provides on-site services including completion of waste profiles, design and fabrication of custom steel structures and packages and staff augmentation. Our Equipment and Machinery Group handles the loading, blocking/bracing and transportation of heavy and over-dimensional equipment and machinery. All work is performed economically in a safe manner and under our NQA-1 Program.

## **IAEA Careers**

Contact: Natalie Wren Booth#: 933  
9700 S Cass Ave, Lemont, IL 60439  
P: 630-252-7147 Email: nwren@anl.gov  
<https://international.anl.gov/careers/index.html>

Contribute to international peace and development through an overseas assignment at the International Atomic Energy Agency (IAEA) in Vienna, Austria. IAEA is the world's center for cooperation in the nuclear field and committed to promoting safe, secure and peaceful uses of nuclear technology. Interested and qualified US applicants are encouraged to contact the International Programs Section at [IAEASTaffing@anl.gov](mailto:IAEASTaffing@anl.gov) before submitting an application so that we, the US Support Program to IAEA, may provide you with additional assistance and track the status of your application. All applications must be submitted to [www.iaea.org](http://www.iaea.org).

## **IBC Advanced Technologies, Inc.**

Contact: Paul Talbot Booth#: 1234  
856 E Utah Valley Dr, American Fork, UT 84003  
P: 801-763-8400 F: 801-763-8491  
Email: ptalbot@ibcmrt.com  
Website: www.ibcmrt.com

IBC Advanced Technologies, Inc. is a world leading fine and specialty chemicals company that develops and commercializes Molecular Recognition Technology (MRT) products and processes. Molecular recognition is a process by which one chemical species shows a distinct preference for another. IBC provides innovative molecular recognition products to the industrial,

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process, environmental, analytical, and life sciences industries.

## **INTERA Incorporated**

Contact: Tanya Townsend Booth#: 618  
1812 Centre Creek Dr, Ste 300, Austin, TX 78754  
P: 512-425-2019  
Email: ttownsend@intera.com  
Website: www.intera.com

Since 1974, INTERA has developed a world-class reputation in quantifying and managing risk for our clients' environmental and water resource challenges. As a geosciences and engineering consulting firm, INTERA is a leader in the characterization of hydrologic and hydrogeologic systems, the collection and analysis of hydrologic data to support water planning, the design and implementation of soil and groundwater investigations and remedial actions to address affected soil and groundwater, and the hydrogeologic characterization and performance assessment analyses needed to demonstrate the long-term safety of environmental operations at DOE facilities and domestic and international radioactive waste repositories. INTERA, a 140 person small business based in Austin, Texas, operates from seven domestic offices in the United States, as well as two offices in Europe (Lyon, France, and Baden, Switzerland).

## **Inuktun, US, LLC**

Contact: Rod Barber Booth#: 932  
103 Rio Rancho Dr, Ste A-6  
Rio Rancho, NM 87124  
P:505-994-0702 F:505-994-0726  
Email: rod@inuktun.us  
Website: www.inuktun.us

Inuktun has built a reputation as the expert in remote controlled robotic transport and delivery of visual inspection equipment and instrumentation tooling. Reliability, efficiency, quality, and cost-effectiveness are emphasized in the design of all equipment produced by ISL.

In addition to producing and selling a complete line of standard equipment for a variety of remote robotic inspection applications, the company also offers a complete range of engineering services from conceptual design through to project completion.

## **iRobot Corporation**

Contact: Kim Monti Booth#: 830  
8 Crosby Drive, Bedford, MA 1730  
P:505-590-0300 F:781-430-3001  
Email: kmonti@irobot.com  
Website: www.irobot.com

iRobot – Defense & Security: for standard operations, hazardous material handling, and

operations conducted in confined spaces, the iRobot family unmanned ground vehicles offer cost-savings capabilities that protect your work force and increase efficiency. The robots are equipped with numerous cameras for thermal imaging or low-light and dark environments, strong arms and manipulators, and combined with better-than-human auditory capabilities, these robots perform in-depth inspections, investigations, or material handling operations.

With more than 20 years of leadership in the robot industry and more than 10 million robots in use worldwide, iRobot remains committed to building robots that improve the quality of life and safety standards worldwide.

## **ISO Pacific Nuclear Assay Systems, Inc.**

Contact: Sheri Kelly Booth#: 814  
2750 Salk Ave, Ste 106, Richland, WA 99354  
P:509-375-0100 F:509-375-0101  
Email: Sheri.kelly@isopacific.net  
Website: www.isopacific.net

ISO-PACIFIC is a green environmental remediation firm specializing in the physical separation of radiologically contaminated soil fractions from otherwise clean soil. Known as soil sorting, our volume reduction service can result in huge savings in the deposition and disposal of radioactive soil waste stocks.

## **ITD USA**

Contact: Christie Loveday Booth#: 217  
448 N Cedar Bluff Rd, Ste 262  
Knoxville, TN 37923  
P:865-209-9386 F:865-357-0749  
Email: Christie.Loveday@itd-usa.com  
Website: www.itd-usa.com

ITD USA Inc. has activities in the special market of nuclear technical equipment and installation. Our main customers are the manufacturers and users of radioactive material as sealed sources, radiochemicals and radiopharmaceuticals. Our main production programs are single cell or cell rows with special incell-equipment. Master-Slave Manipulators realized the remote controlled handling of objects and tools in these cells. We have an experienced staff that guarantees the highest quality of our products. Customer specific innovative product solutions and a product related personnel training are in our service range.

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## **James Fisher Technologies**

Contact: Scott Adams Booth#: 702  
1234 Sherman Drive, Longmont, CO 80501  
P:720- 408-0100 F:720- 408-0200  
Email: scott.adams@jftechgroup.com  
Website: www.jftechgroup.com

James Fisher Technologies is an established supplier of remote solutions, specialty engineering, manufacturing, and technical services for applications within challenging environments or with high integrity requirements. We offer an extensive range of expertise, products and services to customers demanding the highest standards of quality, reliability and safety for operations in hazardous environments.

## **Joseph Oat Corporation**

Contact: Crystal Harrington Booth#: 935  
2500 Broadway Rd, Camden, NJ 8104  
P:856-541-2900 ext. 216 F:856-541-0864  
Email: charrington@josephoat.com  
Website: www.josephoat.com

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Contact: Charlotte O'Neil Booth#: 121  
PO Box 2501, 301 Laboratory Rd  
Oak Ridge, TN 37831  
P: 865-481-4724 F: 865-483-4722  
Email: oneilc@leidos.com  
Website: www.leidos.com/engineering

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Contact: John Longenecker Booth#: 808  
2514 Red Arrow Dr, Las Vegas, NV 89135  
P:702-493-5363 F:702-586-0143  
Email: jrl@longenecker-associates.com  
Website: www.longenecker-associates.com

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## **Los Alamos National Laboratory**

Contact: Christopher Fresquez Booth#: 1227  
PO Box 1663, Los Alamos, NM 87545  
P:505-665-7175 F:505-667-9882  
Email: chrisjf@lanl.gov W: <http://www.lanl.gov>

## **LSC Environmental Products, LLC**

Contact: Amy Tyler Booth#: SB Pavilion  
2183 Pennsylvania Ave., Apalachin, NY 13732  
P:607-625-3050 F:607-625-2689  
Email: atyler@lscenv.com  
Website: www.lscenv.com

LSC Environmental Products, LLC has been serving the Waste Industry for over 20 years. Our product Posi-Shell® is in use worldwide for daily cover in MSW, Hazardous Waste, and Radioactive waste landfills. Along with this we provide solutions for dust control, odor control, erosion control, and intermediate cover. Our application equipment is built to endure the rigors of landfill work and we provide custom options. LSC offers solutions for environmental challenges that make us a tool you shouldn't run a landfill without.

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Contact: Justin Dexter Booth#: 1030  
14 Marin Way, Stratham, NH 3885  
P:603-773-9333 F:603-773-0008  
Email: j.dexter@mbraunusa.com  
Website: www.mbraun.com

## **Major Tool & Machine, Inc.**

Contact: Mike Kramer Booth#: 731  
1458 E 19th St, Indianapolis, IN 46218  
P:317-917-2626 F:317-634-9420  
Email: mkramer@majortool.com  
Website: www.majortool.com

Major Tool and Machine provides the nuclear marketplace with best value, turnkey, engineering, fabrication and machining services. Our extraordinary capability, capacity and experience are driven by our commitment to quality assurance. This is evidenced through our ASME N, NPT, N3, NS, U and U2 certifications. In addition, our Nuclear Quality Assurance Program is audited to the requirements of NQA-1 and complies with 10CFR21, 10CFR50 part B, 10CFR71 subpart H, 10 CFR72 subpart G and 10CFR830. Our combined strengths of outstanding program management, unparalleled capability and uncompromising quality

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Contact: Nathan Marks                      Booth#: 528  
PO Box 338, Boring, OR 97009  
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Email: nmarks@marks-brothers.com  
Website: www.marks-brothers.com

Marks Brothers, Inc. is a leading manufacturer of ASME Pressure Vessels, Casks, Shell and Tube Heat Exchangers and a variety of specialty custom fabricated equipment. From simple components - canisters, glove boxes, to designed and engineered complex fabrications, our mission is to "Do it Better." Let us show you what we can do.

## **Marshallton Research Laboratories, Inc.**

Contact: Amy Leadford                      Booth#: 1024  
PO Box 930, King, NC 27021  
P:336-983-2131                      F:336-983-0096  
Email: marshallton@windstream.net  
Website: www.marshalltonlabs.com

Marshallton manufactures specialty chemicals for treatment and recycling in the nuclear energy industry. These include extractants for cesium removal ( MAXCalix, BOBCalixC6), specialty solvents (Cs-7SB, FS-13), and substituted guanidines. Also available: actinide extractants and analytical reagents. Custom synthesis, custom formulation: grams to 100's of kilograms. Concept through commercialization.

## **Mega-Tech Services, LLC**

Contact: Deanna Bowen                      Booth#: 1113  
11118 Manor View Dr  
Mechanicsville, VA 23116  
P:804-789-1577                      F:804-789-1578  
Email: dbowen@mega-techservices.biz  
Website: www.mega-techservices.biz

Mega-Tech Services, LLC provides a complete line of high pressure hydraulic tools including Guillotine Cutters, Scissor Cutters, Crushers, Crimpers, Pipe Punches, Sampling, Spreaders, and Grapplers. We offer extensive expertise in specialty or custom tooling applications for nuclear maintenance and decommissioning projects. Mega-Tech Services, LLC is a woman-owned small business providing services to the nuclear industry in both domestic and international markets for over 20 years.

## **Metal Solutions Design & Fabrication, LLC**

Contact: Kathy Pugh                      Booth#: 409  
215 Main St, Dayton, KY 41074  
P: 859-282-5000                      F: 859-282-5003  
Email: kathyp@msdf1.com  
Website: www.msdf1.com

Metal Solutions is a full service fabrication company specializing in the design, testing and manufacturing of IP-1, IP-2, IP-3 and 7A type A containers. Our staff is familiar with the specific needs of 49 CFR and NNSW WAC. We operate under a NQA-1 QA program and certify our welders to AWS D1.1 & D1.3

## **MHF Services**

Contact: Lisa Sabol                      Booth#: 1001  
4500 Brooktree Rd, Ste 200  
Wexford, PA 15090  
P:724-272-9578                      F:866-772-5282  
Email: lisa\_sabol@mhfservices.com  
Website: www.mhfservices.com

MHF Services is the nuclear industry's leading provider of technical services, packaging, transloading, transportation and disposition services. We pioneered direct rail and intermodal transportation to safely and economically ship environmentally sensitive materials. MHF recently acquired the assets of Bull Run Metal Fabricators and Engineers, Inc., an innovative provider of specialty metal packaging for generators and shippers of radioactive materials and waste. BRM manufactures Low Level and Intermediate Level waste containers ranging from IP-1 to Type B that meet USDOT and IAEA certification standards. This acquisition positions MHF as a leading provider of metal and flexible specialty packaging solutions for the nuclear industry.

## **Mobile Characterization Services, LLC**

Contact: Eric Pennala                      Booth#: 1137  
4110 Ellison St, NE, Ste B  
Albuquerque, NM 87109  
P:505-433-3790                      F:505-345-3810  
Email: epennala@canberra.com

MCS is a joint venture partnership of Canberra Industries, Pajarito Scientific Corporation, and V. J. Technologies specializing in mobile characterization of TRU and LL Waste using real-time radiography and non-destructive assay technologies. MCS is currently certified at multiple sites throughout the complex and has characterized over 200,000 containers for shipment to WIPP and other repositories.



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## **NAC International**

Contact: Whitney West Booth#: 509  
3930 E Jones Bridge Rd, Ste 200  
Norcross, GA 30092  
P: 678-328-1301 F: 678-328-1501  
Email: wwest@nacintl.com  
Website: www.nacintl.com

NAC International (NAC) is an industry-leading provider of engineering and nuclear fuel management solutions for nuclear facility operators, fuel cycle companies and government agencies. The company offers a proven process for the design, licensing and deployment of innovative technologies to store, transport and manage nuclear materials, including high level waste and spent fuel. Our professional staff possesses unsurpassed industry knowledge and experience, necessary for today's demanding requirements for nuclear fuel cycle projects and performance. NAC serves more than 200 customers and supports a host of diverse projects.

## **Nat'l Museum of Nuclear Science & History**

Contact: Charles W. Lowery II Booth#: 1033  
601 Eubank Boulevard SE, Albuquerque, NM  
P: 505-245-2137, ext. 110 F: 505-242-4537  
Email: clowery@nuclearmuseum.org  
Website: www.nuclearmuseum.org

The mission of the National Museum of Nuclear Science & History is to serve as America's resource for nuclear history and science. The Museum presents exhibits and quality educational programs that convey the diversity of individuals and events that shape the historical and technical context of the nuclear age. As the only national museum in the state of New Mexico and the only nuclear science museum chartered by the U.S. Congress, The National Museum of Nuclear Science & History greatly contributes to the education and welfare of our citizens, and is in the unique position to elevate the performance of our students. The Museum's goal is to provide programs that are meaningful to students and meet the needs of teachers as they relate to national education standards. The Museum accomplishes these goals through minds-on / hands-on activities, excellent exhibits, innovative school programs, tours, and lectures. The Museum was established in 1969, chartered by Congress as a NATIONAL institution in 1991, and has been Affiliated with the Smithsonian Institution since 2002, and is Accredited through the American Alliance of Museums. The Museum is operated by the National Atomic Museum Foundation, Inc., a non-profit 501(c)(3) charitable organization.

## **Navarro Research and Engineering, Inc.**

Contact: Mary Rhea Booth#: 431  
669 Emory Valley Rd, Oak Ridge, TN 37830  
P: 865-220-9650 F: 865-220-9651  
Email: rhea@navarro-inc.com  
Website: www.navarro-inc.com

Navarro is a premier contractor for the Dept of Energy, the National Nuclear Security Administration, the National Aeronautics and Space Administration, and the Dept of Defense providing environmental, renewable energy and energy efficiency, nuclear, information technology, and quality and safety services. Navarro, a woman-owned small disadvantaged business, has over 400 employees working in fourteen offices and twenty-three project locations nationwide.

## **NETZSCH Instruments North America, LLC**

Contact: Fumi Akimaru Booth#: 634  
129 Middlesex Turnpike, Burlington, MA 01803  
P: 781-272-5353  
Email: fumi.akimaru@netzsch.com  
Website: www.netzsch-thermal-analysis.com

Netzsch Instruments is the leading manufacturer of thermophysical properties/thermal analysis instrumentation for the measurement of properties such as thermal conductivity, thermal diffusivity, specific heat, transition energetics, thermal expansion, mass change, solidus/liquidus temperatures and evolved gases. Our instruments can be operated in cold, fume hood, glovebox and hot cell environments.

## **NFT**

Contact: Crystal Dunkle Booth#: 717  
741 Corporate Cir, Ste R, Golden, CO 80401  
P: 303-987-2020 x255 F: 303-384-9579  
Email: crystal@nucfil.com  
Website: www.nftinc.com

Industry leader dedicated to providing superior packaging, shielding and characterization technologies for ventilation, storage, transportation and disposal of radioactive and mixed waste.

## **Nitrocision LLC.**

Contact: Rosey Villagomez Booth#: 1032  
6766 Culebra Rd, San Antonio, TX 78238  
P: 210-256-4108  
Email: mvillagomez@nitrocision.com  
Website: www.ihiswt.com

Nitrocision provides nuclear decontamination, precision cutting and industrial cleaning solutions and services to the power, petroleum, chemical, and wind industries around the world. Nitrocision's staff consists of qualified, experienced engineering and personnel. All of Nitrocision's engineers are

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Contact: Pauline Endecott            Booth#: 530  
1425 Higham St, Idaho Falls, ID 83420  
P: 208-528-8718  
Email: pendecott@northwindgrp.com  
Website: www.northwind-inc.com

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Contact: Anu Agnihotri                Booth#: 835  
1400 Opus Pl, Ste 904  
Downers Grove, IL 60515  
P:630-352-3686            F:630-852-8787  
Email: anu@goinfo.com  
Website: www.nuclearplantjournal.com

Now in its 31st year, Nuclear Plant Journal, a US publication, provides technical information exchange among managers and engineers in the industry worldwide. Circulation: 12,000, 44 countries, BPA Audited. Published six-times per year. Annual Products & Services Directory published in December. The Journal's entire editorial archive is online at nuclearplantjournal.com and is full-text searchable. Digital editions of the Journal are also available. US readers may subscribe cost-free for a print or PDF version, overseas readers may subscribe cost-free to the digital version of the Journal.

## **Nuclear Safety Associates**

Contact: Chris Dean                    Booth#: 422  
PO Box 471488, Charlotte, NC 28247  
P:704-731-2301            F:704-731-2309  
Email: Chris.dean@nuclearassociates.com  
Website: www.nuclearassociates.com

At Nuclear Safety Associates (NSA) we offer client solutions crafted by the best engineers and specialists in the industry, served with truly exceptional customer service. We earn trust by exceeding expectations on every project we undertake. NSA is a premier provider of safety, security, and engineering services to the North American nuclear markets, with a focus on highly specialized niche skills and a senior staff that includes well-known subject matter experts. Our quality assurance program meets the requirements

of numerous domestic and international standards, has successfully passed four NQA-1 audits since January 2012, and provides a strong foundation for our self-directed project offerings. Our philosophy for success is straight forward. We believe in hiring the most qualified engineers and other professionals in the industry, and actively practice continuous improvement both in our infrastructure and the qualification and technical diversification of our staff. Our results speak for themselves. Launched in 2001 with one employee, one client, and a focus on the niche field of nuclear criticality safety, today NSA's more than 150 employees offer clients comprehensive services along four business lines: Nuclear Safety and Licensing, Safeguards and Security, Specialized Design Engineering, Readiness Assurance and Operations Management.

## **Nuclear Waste Partnership LLC**

Contact: Rose Scott                    Booth#: 534  
PO Box 2078, GSA-104, Carlsbad, NM 88221  
P:575-234-7512            F:575-234-7002  
Email: rose.scott@wipp.ws  
Website: www.wipp.ws

The US DOE Waste Isolation Pilot Plant,(WIPP) became the nation's first operating underground repository for radioactive defense wastes in 1999. The WIPP facility, located in southeastern New Mexico, was designed for permanent disposal of radioactive transuranic waste, the byproduct of nuclear weapons research and production. Project facilities include disposal rooms excavated 2,150 feet underground in an ancient, stable salt formation.

## **NUCON International, Inc.**

Contact: Robert Sommer            Booth#: 810  
7000 Huntley Rd, PO Box 29151  
Columbus, OH 43229  
P:614-846-5710 x125    F:614-431-0858  
Email: Bob.Sommer@nucon-int.com  
Website: www.nucon-int.com

NUCON specializes in high efficiency filtration process equipment. Activated carbon and specialty adsorbents for the control of radioiodine, mercury, sulfur, noble and acid gases. Testing of HVAC and filtration systems. Manufacture instruments for testing HVAC systems. Engineering, design, fabrication and testing of systems using adsorption technology including gaseous radwaste control.

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## **NukeWorker.com**

Contact: Michael Rennhack Booth#: 603  
5379 Meadow Ln, Coloma, MI 49038  
P:269-369-8833  
Email: Rennhack@NukeWorker.com  
Website: www.NukeWorker.com  
NukeWorker delivers more nuclear job seekers than any other career site, with the only database of nuclear resumes. NukeWorker ranks #1 in search engines for 'nuclear jobs' and is the most visited nuclear site on the Internet, with more than 7 million page views each month.

## **NUVIA**

Contact: Isabelle Mennesson Booth#: 223  
85 Av Archimede  
Aix en Provence, Bouches du Rhone 13857 France  
P:+334 42 61 27 31 F:+334 42 61 27 28  
Email: isabelle.mennesson@nuvia.fr  
Website: www.nuvia.fr

Nuvia is a subsidiary of the specialist works and engineering group Soletanche Freyssinet with 16,500 staff and a turnover of €2.4 billion. Freyssinet has a long history of involvement in the nuclear industry through worldwide use of its advanced engineering and specialist products. Nuvia can trace its roots from the beginning of the French and British nuclear industries. The Group has grown organically and through mergers and acquisitions. Pioneering work in construction, engineering, energy, nuclear R&D, design, build, operations, radiation protection and decommissioning has been undertaken; always with a strong emphasis on safety, quality, and sustainability. The Group's rich heritage is reflected in the wide range of services provided today.

## **NuVision Engineering/Mid Columbia Engineering Inc.**

Contact: Dena Notaras Booth#: 610  
2155 Robertson Dr, Richland, WA 99354  
P:509-420-2451 F:509-943-6707  
Email: dnotaras@mceng.com  
Website: www.nuvisioneng.com

Mid Columbia Engineering, Inc. (MCE) offers engineering, manufacturing and technical services to the nuclear, energy, environmental, defense, and commercial industries. MCE provides technical services ranging from engineering and manufacture of precision hardware to specialty staffing support. MCE delivers complete in-house design-and-build engineering, machining, fabrication, assembly, testing, and project management for commercial and NQA-1 projects.

## **ORTEC**

Contact: Susie Brockman Booth#: 709  
801 S Illinois Ave, Oak Ridge, TN 37831  
P:865-483-2124 F:865-425-1380  
Email: Susie.Brockman@ametec.com  
Website: www.ortec-online.com

ORTEC manufactures a wide range of radiation measurement instruments and systems for use in waste management operations associated with plant operation, decommissioning and waste disposal, including in situ characterization measurements and containerised waste assay. Visit the ORTEC booth to learn about our latest products, including our latest ISOCART-85 mobile system for free release waste assay.

## **PacTec, Inc.**

Contact: Mike Sanchez Booth#: 820  
PO Box 8069, Clinton, LA 70722  
P:800-272-2832 F:225-683-8711  
Email: mikesanchez@pactecinc.com  
Website: www.pactecinc.com

PacTec Inc. has 25 years experience in designing and manufacturing the most innovative and cost efficient packaging solutions for the transport, storage and disposal of nuclear and hazardous wastes. PacTec's IP1 and IP2 flexible containers are used on decommissioning sites and remediation projects around the globe.

## **Pajarito Scientific Corporation**

Contact: Michael Pitts Booth#: 608  
2976 Rodeo Park Dr E, Santa Fe, NM 87505  
P:505-424-6660 F:505-424-1109  
Email: mpitts@pscnda.com  
Website: www.pajaritoscientific.com

An American-owned small business providing non destructive assay systems and services and criticality safety systems to safeguards, commercial and government nuclear remediation and reprocessing projects. We provide safe, cost-effective solutions for nuclear material characterization. PSC provides security cleared personnel through Pajarito Scientific Security Corp.

## **PaR Systems, Inc.**

Contact: Brittney Keough Booth#: 723  
707 County Rd E W, Shoreview, MN 55126  
P:651-846-3003 F:651-483-2689  
Email: bkeough@par.com  
Website: www.par.com

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including telerobotic manipulators, powered manipulators, robotic systems and transporters, and in-cell cranes.

## **Paragon D&E**

Contact: Bill Smith                      Booth#: 1236  
5225 33rd St SE, Grand Rapids, MI 49512  
P: 616-949-2220  
Email: bill@compucraft.net  
Website: www.paragonde.com

Paragon D&E specializes in taking product development from concept to design to production. Paragon is NQA-1 approved and is skilled in working with certification of materials. Paragon handles all phases from specialized machining, rapid prototyping to testing and production with expertise in large parts. Paragon also produces very detailed, as well as extremely large composite tooling and parts.

## **Pentek, Inc.**

Contact: Linda Lukart                      Booth#: 501  
1026 Fourth Ave, Coraopolis, PA 15108  
P:412-262-0725                      F:412-262-0731  
Email: linda.lukart@pentekusa.com  
Website: www.pentekusa.com

WM2011 marks Pentek's 30th year of service to the nuclear D&D industry. From early roots established during Three Mile Island Unit 2 accident recovery activities, Pentek is now a global supplier of engineering services and specialized equipment to support facility remediation and waste management, including decontamination of structural steel, concrete, wood and synthetic materials. VAC-PAC®, MOOSE® and WallWalker® are Pentek's flagship products.

## **Perma-Fix Environmental Services, Inc.**

Contact: Wendy Lambert                      Booth#: 411  
2800 Solway Rd, Knoxville, TN 37931  
P:865-251-2090  
Email: wlambert@perma-fix.com  
Website: www.perma-fix.com

Perma-Fix Environmental Services, Inc. is a nuclear services company and leading provider of nuclear waste management services. The Company's nuclear waste services include management and treatment of radioactive and mixed waste for hospitals, research labs and institutions, Department of Energy ("DOE"), Department of Defense ("DOD"), and the commercial nuclear industry. The Company's nuclear services group provides project management, waste management, environmental restoration, decontamination and decommissioning, new build construction, and radiological protection, safety and industrial hygiene capability to our clients. The Company

operates four fixed based nuclear waste treatment facilities and provides the most comprehensive mixed waste management services nationwide.

## **Petersen, Inc.**

Contact: Rob Despain                      Booth#: 919  
1527 N 2000 W, Ogden, UT 84404  
P:801-721-0000                      F:801-732-2098  
Email: robd@peterseninc.com  
Website: www.peterseninc.com

Petersen, Inc. is a Small Business currently providing the DOE industry with Melters, Gloveboxes, Standard Waste Box, Ten-Drum Over Pack, IP1, IP2's and other NQA-1 quality transportation and storage containers. We are the fabricator of the HLW and LAW Melters at the River Protection Project in Hanford, Washington.

## **PHDS Co.**

Contact: Ethan Hull                      Booth#: 1132  
3011 Amherst Rd, Knoxville, TN 37921  
P: 865-481-3725  
Email: ethanhull@phdsco.com  
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Contact: James Glasgow                      Booth#: 424  
2300 N St, NW, Washington, DC  
P:202-663-9200                      F:202-663-8007  
Email: james.glasgow@pillsburylaw.com

## **PlantDecommissioning.com**

Contact: Steve Larson                      Booth#: 806  
266 Park Ave, Lake Villa, IL 60046  
P:847-265-8800  
Email: srl9999@aol.com  
Website: www.plantdecommissioning.com

PlantD designs and fabricates turnkey tools and machines for segmenting large irradiated components, such as the remote underwater machines used at Zion. Our experience was called on in 2011 to conceive and propose for PG&E a new segmentation approach that is currently in use for the Humboldt Bay reactor. In addition to large machines, we manufacture support tools such as grippers and long handle tooling.



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Contact: Michelle Tremelling Booth#: 1130  
1075 S Utah Ave, Ste 200, Idaho Falls, ID 83404  
P:208-528-6608 F:208-523-8860  
Email: mtremelling@portageinc.com  
Website: www.portageinc.com

Portage, Inc., provides comprehensive engineering and technical solutions for environmental, infrastructure, and energy projects. The company supports federal, state, and local governments and private industry worldwide.

## **Premier Technology, Inc.**

Contact: Lyle Freeman Booth#: 429  
1858 W Bridge St, Blackfoot, ID 83221  
P:208-785-2274 F:208-782-9001  
Email: lfreeman@ptius.net  
Website: www.ptius.net

Premier Technology, Inc. began manufacturing operations in 1996 and has grown to over 340 employees in that time. Customer growth has provided Premier the opportunity to move from a 24,000 sq. ft. facility to a 200,000 sq. ft. facility and maintain a constant workflow. With our current shop capacity, management, and manufacturing experience, Premier is capable of performing large-scale projects ranging up to \$100M. Premier is a progressive manufacturing company focused on the integration of technology and science with professional craftsmanship. We perform construction management, custom engineering, design, fabrication, testing, and installation for the nuclear, Department of Defense, Department of Energy, aeronautical, food, and chemical processing industries. We are known for our ability to supply the highest quality turnkey engineering, custom fabrication, system integration, and field installation solutions to those industries. Examples of custom fabricated items are: vessels, heat exchangers, exhausters, gloveboxes, hot cells, stairs, railing, platforms, conveyors, conveyance systems, structural steel items, skid technology, etc.

## **Project Services Group, LLC**

Contact: Lauren Amos Booth#: 604  
780 Buford Hwy, Ste 202A, Suwanee, GA 30024  
P:866-214-2519 F:866-736-3475  
Email: lauren.amos@psginfo.com  
Website: www.psginfo.com

Project Services Group is an 8(a) SDB that provides professional, technical and administrative consulting and staff augmentation services, from quick turn-around tasks to long-term projects.

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PSG has offices in Georgia, South Carolina, Washington State, Texas, New Mexico, Tennessee and Colorado.

## **Radiation Shielding, Inc.**

Contact: Heather Simpkins Booth#: 927  
PO Box 881, Pinson, AL 35126  
P:205-680-1105 F:205-680-1106  
Email: heather@radiationshieldinginc.com  
Website: www.radiationshieldinginc.com

Radiation Shielding, Inc. offers a complete line of high-quality, cost-effective radiation shielding solutions for the nuclear waste management community. We offer a complete line of standard and custom products. All Radiation Shielding, Inc. products are proudly made in the U.S.A.

## **Radwaste Solutions Magazine/ Nuclear News**

Contact: Jeff Mosses Booth#: 718  
555 N Kensington Ave  
LaGrange Park, IL 60526  
P:708-579-8225 F:708-352-6464  
Email: jmosses@ans.org  
Website: www.ans.org/advertising

Published by the American Nuclear Society, Radwaste Solutions is the magazine of radioactive waste management and facility remediation. Articles cover the generation, handling, removal, treatment, cleanup, and disposal of radioactive (including mixed) waste. If your company provides radwaste-related products or services, we invite you to advertise and subscribe. A complimentary January-April issue is included within your WM2014 registration packet!

## **Reef Industries, Inc.**

Contact: Tom Scarborough Booth#: 526  
9209 Alameda Genoa Rd, Houston, TX 77075  
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Contact: Rob Trimble Booth#: 931  
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Email: rtrimble@reinuclear.com  
Website: www.reinuclear.com

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## **ResinTech, Inc.**

Contact: Frank DeSilva Booth#: 508  
160 Cooper Rd, West Berlin, NJ 08091  
P:856-768-9600 F:856-768-9601  
Email: fdesilva@resintech.com  
Website: www.resintech.com

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## **Robatel Technologies, LLC**

Contact: Donna Martin Booth#: 611  
5115 Bernard Dr, Ste 304, Roanoke, VA 24018  
P:540-989-2878  
Email: dmartin@robateltech.com  
Website: www.robateltech.com

## **RusTech Language Services, Inc.**

Contact: Marilyn Young Booth#: 326  
1338 Vickers Rd, Tallahassee, FL 32303  
P:850-562-9811 F:850-562-9815  
Email: mjyoung@russtechinc.com  
Website: www.russtechinc.com

RusTech Language Services, Inc. is a full-service language company specializing in written translations and interpreting services for more than 100 languages and dialects worldwide. We provide our clients with the ability to further their international objectives through consistent, high quality language support.

## **S.E. International, Inc.**

Contact: Beth Cramer Booth#: 1035  
436 Farm Rd, PO Box 39  
Summertown, TN 38483  
P:931-964-3561 F:931-964-3564  
Email: beth@seintl.com  
Website: www.seintl.com

S.E. International, Inc., manufacturer of the Radiation Alert® products offering handheld

ionizing radiation instruments, Geiger counters, dosimeters, dosimeter chargers, alarming rate meters and multi-channel analyzers for surface/air contamination. Come by to see The Gamma PAL, a complete portable measuring system for analyzing radiation contamination in food, milk, as well as soil, water, air and other materials. It allows users to directly and easily perform quick, reliable measurements in Bq/l or Bq/kg and identify the isotopes present in potentially contaminated material using one of three pre-calibrated geometries.

We also calibrate all of our Radiation Alert® instrumentation at our facility.

## **Savannah River National Laboratory**

Contact: Steve Bellamy Booth#: 1237  
Savannah River Site Bldg. 730A  
Aiken, SC 29803  
P:803-725-1083 F:803-725-1744  
Email: steve.bellamy@srnl.doe.gov  
Website: srnl.doe.gov

The Savannah River National Laboratory (SRNL) is the applied research and development laboratory at the U.S. Department of Energy's (DOE) Savannah River Site (SRS). The laboratory applies state-of-the-art science to provide practical, high-value, cost-effective solutions to complex technical problems. The laboratory earns its world-class reputation because of its talented people and their unwavering commitment to safety, security and quality in the delivery of technology solutions that work.

## **Siempelkamp Nuclear Services, Inc.**

Contact: Steven Garner Booth#: 319  
3229 Sunset Blvd, Ste M  
West Columbia, SC 29169  
P: 803-796-2727 F:803-939-1083  
Email: steve.garner@siempelkamp-sns.com  
Website: www.siempelkamp-sns.com

Siempelkamp Nuclear Services, Inc.'s core business comprises Project Management, Engineering and Planning, Components and Systems Solutions for equipment and retro-fitting as well as Decontamination and Decommissioning (D&D), Modernization/Modification of Components and Systems of Nuclear Facilities, Stud Tensioning Devices, Containers, Recycling, Manufacture, Calculations and Analyses as well as service.

**Monday, March 3, 2014**

***Exhibit Hall Hours***  
***8:30 AM – 6:30 PM***  
***International Reception***  
***5:00 PM – 6:30 PM***

# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

## **Skolnik Industries Inc**

Contact: Dean Ricker Booth#: 721  
4900 S KILbourn Ave, Chicago, IL 60632  
P: 773-884-1510 F: 773-735-7257  
Email: dean@skolnik.com  
Website: www.skolnik.com

Skolnik Industries is a manufacturer of carbon and stainless steel drums for storage and disposal of radioactive material. In addition, Skolnik manufactures custom packaging for the DOE and nuclear industries.

## **SOURIAU**

Contact: Chris Eason Booth#: 711  
209 Blue Ridge Dr, Greer, SC 29651  
P:864-561-2797  
Email: ceason@souriau.com  
Website: www.nuclear-connectors.com

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## **Spectra Tech Inc.**

Contact: Sharon Bogaty Booth#: 606  
132 Jefferson Court, Oak Ridge, TN 37830  
P:865-483-7210  
Email: sbogaty@spectratechinc.com  
Website: www.spectratechinc.com

Spectra Tech, Inc. is an engineering, environmental, and nuclear services company that focuses on providing high quality and cost-effective technical solutions for our Federal Government and commercial clients worldwide. We are located in Oak Ridge, Tennessee (main office), Colorado Springs, Colorado, and Huntsville, Alabama.

## **Springs Fabrication**

Contact: Keith Rensberger Booth#: SB Pavilion  
2685 Industrial Ln, Broomfield, CO 80020  
P: 303-438-1570 x14  
Email: keithr@springsfabatg.com  
Website: www.springsfabatg.com

Springs Fab is a supplier of high-end engineered metal products to a wide range of industries, including energy, government and military, nuclear, mining, and remediation. Product offerings include custom ASME pressure vessels,

engineered process skids, and CNC machined components. Our Advanced Technology Group offers a seasoned team of specialists experienced in nuclear containment, gloveboxes, and hot cells, operating under a mature NQA-1 Quality Assurance program.

## **Studsvik**

Contact: Tiffany Poindexter Booth#: 701  
5605 Glenridge Dr, Ste 705, Atlanta, GA 30342  
P:404-381-8593 F:404-497-4901  
Email: Tiffany.Poindexter@studsvik.com  
Website: www.studsvik.com

Founded in 1947, Studsvik is a leading supplier of specialty services to the international nuclear industry and has a proven history of innovation, efficiency and safety. With a corporate commitment to environmental responsibility and sustainability, the company provides technologically advanced services in four main areas: waste treatment, decommissioning, engineering and operating efficiency.

## **Subsurface Insights**

Contact: Roelof Versteeg Booth#: SB Pavilion  
62 Lebanon St, Hanover, NH 3755  
P:603-443-2202  
Email: roelof.versteeg@subsurfaceinsights.com  
Website: www.subsurfaceinsights.com

Subsurface Insights provides cloud based software for automated and autonomous electrical geophysical monitoring as well as design and support for the installation and operation of electrical geophysical monitoring systems.

## **Teledyne Brown Engineering**

Contact: Doug Dixon Booth#: 1027  
300 Sparkman Dr, MS 06, Huntsville, AL 35805  
P:256-726-5624 F:256-726-3909  
Email: doug.dixon@tbe.com  
Website: www.tbe.com

Teledyne Brown Engineering, Inc. is a recognized leader in providing innovative and proven systems engineering, advanced technology application, software development, and manufacturing solutions to Department of Energy, commercial nuclear, environmental, and military requirements. Our strengths in both engineering and manufacturing distinguish us from our competitors.

***Tuesday, March 4, 2014***

***Exhibit Hall Hours***

***9:00 AM – 6:30 PM***

***Best of Finland & Sweden Reception***

***5:00 PM – 6:30 PM***

# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

## **TestAmerica Laboratories, Inc.**

Contact: Kim Johnson Booth#: 600  
7911 E County Rd N, Milton, WI 53563  
P:309-264-7200  
Email: kim.Johnson@testamericainc.com  
Website: www.testamericainc.com

TestAmerica is the leading environmental testing firm in the United States, with over 90 locations providing innovative technical expertise and comprehensive analytical testing services. TestAmerica currently employs nearly 2,800 professionals dedicated to exceptional service and solutions for our clients' environmental testing needs.

## **Tetra Tech**

Contact: Margie Vasquez Booth#: 722  
3475 E Foothill Blvd, Pasadena, CA 91107  
P: 626-470-2330 F: 626-470-2130  
Email: margie.vasquez@tetrattech.com  
Website: www.tetrattech.com

Tetra Tech has provided planning, design, construction, and operations support to DOE/NNSA for more than 30 years. We share DOE's unwavering commitment to the safety and protection of our workers, our nation, and the environment. Tetra Tech's work includes successful ISM on high-risk projects for technically complex programs and facilities at virtually every major site in the DOE/NNSA complex. Our diverse cross-program experience allows us to achieve efficiencies and synergy in our processes, which benefit our DOE/NNSA clients through safe, innovative, and cost-effective solutions to the Department's most imposing challenges.

## **The New York Blower Company**

Contact: Margaret Norris Booth#: 602  
7660 Quincy St., Willowbrook, IL 60527  
P:630-794-5725 F:630-794-5776  
Email: mnorris@nyb.com

## **The S.M. Stoller Corporation**

Contact: Mark Fertitta Booth#: 615  
105 Technology Dr, Ste 190  
Broomfield, CO 80021  
P:303-546-4331 F:303-443-1408  
Email: mfertitta@stoller.com  
Website: www.stoller.com

The S.M. Stoller Corporation was established in 1959 to provide nuclear consulting services. Today, Stoller provides environmental, nuclear, technical consulting, and engineering services to government and private sectors. Services include: characterization and remediation; facility, records, landfill and waste management; decontamination and demolition; analytical quality assurance and control; and risk assessment.

On January 2, 2014, Stoller became a wholly-owned subsidiary of Huntington Ingalls Industries (HII) and will operate under the Newport News Shipbuilding (NNS) division. As an HII subsidiary, Stoller can now leverage the experience, capabilities and resources of HII, a 37,000-employee, \$6.6 billion annual revenue corporation to provide best-in-class nuclear capabilities to our clients.

## **The Ux Consulting Company, LLC**

Contact: Christine Waters Booth#: SB Pavilion  
1501 Macy Dr  
Roswell, GA 30076  
P: 770-642-7745 F: 770-643-2954  
Email: christine.waters@uxc.com  
Website: www.uxc.com

The Ux Consulting Company, LLC (UxC) is among the world's leading consultancies focused on the entire nuclear fuel cycle. UxC is the industry leader in supplying nuclear fuel price information, and it also publishes periodic and client-specific consulting reports on the front-end, back-end, and reactor markets, including SpentFUEL and StoreFUEL.

## **Thermo Fisher Scientific**

Contact: Denny Cannon Booth#: 506  
One Thermo Fisher Way  
Oakwood Village, OH 44146  
P:303-907-0324  
Email: denny.cannon@thermofisher.com  
Website: www.thermoscientific.com/rmp

Thermo Fisher Scientific Inc. is the world leader in serving science. Our mission is to enable our customers to make the world healthier, cleaner and safer. With revenues of \$13 billion, we have 39,000 employees and serve customers within pharmaceutical and biotech companies, hospitals and clinical diagnostic labs, universities, research institutions and government agencies, as well as in environmental and process control industries. We create value for our key stakeholders through three premier brands, Thermo Scientific, Fisher Scientific and Unity Lab Services, which offer a unique combination of innovative technologies, convenient purchasing options and a single solution for laboratory operations management. Our products and services help our customers solve complex analytical challenges, improve patient diagnostics and increase laboratory productivity.

***The WM2014 Registration Desk will move to 101A after the Exhibit Hall closes on Wednesday, March 5<sup>th</sup> at 1:30 pm***



# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

## **Tioga Pipe Supply Company, Inc**

Contact: Jeff Shaw Booth#: 629  
2450 Wheatsheaf Ln, Philadelphia, PA 19137  
P:215-831-0700 F:215-533-1645  
Email: jshaw@tiogapipe.com  
Website: www.tiogapipe.com

Tioga has been a leading supplier to the international nuclear power industry since 1982. We offer unique solutions including a full complement of qualified materials: fittings, flanges, pipe, tubing, plate, sheet, fasteners, structural shapes, forgings, bar and wire. QSC 467, NQA-1, 10CFR 50 App. B, Part 21, ISO 9001-2008. Fully audited by ASME, NUPIC and NIAC. 24-7 Emergency service.

## **Tri-State Motor Transit Co.**

Contact: Kyla Jewsbury Booth#: 317  
8141 E 7th St. , Joplin, MO 64801  
P:417-621-2213 F:417-621-2022  
Email: kyla.jewsbury@tsmtco.com  
Website: www.tsmtco.com

Radioactive transportation.

## **Tru-Motion Products, Inc.**

Contact: Gary Tyson Booth#: 619  
112-D Charter St, Albemarle, NC 28001  
P:704-982-9242 F:704-982-9242  
Email: service@telemanipulators.com  
Website: www.telemanipulators.com

Tru-Motion Products is the leading manufacturer of telemanipulators for PET hot cells since 1993. Our telemanipulators are specifically designed for compact enclosures, economical, lightweight, easy to operate, and very fast. Due to the simplicity of our design, our telemanipulators are nearly maintenance free. We can size the arm segments to provide the required handling coverage inside a custom enclosure. Tru-Motion Products offers telemanipulator models that are capable of providing full coverage in hot cells from all leading manufacturers including Capintec, Comecer, Radiation Shielding Inc, Tema Sinerge, and Von Gahlen International. We are very customer service oriented, feel free to contact us anytime with any questions or concerns.

## **TWI Ltd**

Contact: Becki Parratt Booth#: 227  
Granta Park, Great Abington  
Cambridge, Cambridgeshire United Kingdom  
P:+44(0)1223 899000  
Email: becki.parratt@twi.co.uk  
Website: www.twi.co.uk

TWI is a world leading research and technology organisation. From bases in UK, USA, China, Malaysia, Middle East, India and Australia, over

700 staff provide technical support in joining and technologies such as material science, structural integrity. NDT, surfacing, electronic packaging and cutting. Services include generic research, contract R&D, technical information, consultancy, standards drafting, training and qualification. TWI offers a single, impartial source of service for joining engineering materials.

TWI is internationally renowned for its multidisciplinary teams that implement established or advanced joining technology solving problems at any stage – from initial design, materials selection, production and quality assurance, through service performance to repair.

## **UltraTech International, Inc.**

Contact: Mark Shaw Booth#: 623  
11542 Davis Creek Ct, Jacksonville, FL 32256  
P:904-292-1611 F:904-292-1325  
Email: mark.shaw@spillcontainment.com  
Website: www.spillcontainment.com

UltraTech provides innovative product and technology solutions ranging from vents and filters, packaging, storage, absorbents, bag-out bags, Type A packaging, containers, secondary containment and customized products to meet specific site needs. Recent developments to be highlighted will include macroencapsulation technology and a new line of gas sampling filter vents.

## **UniTech Services Group, Inc.**

Contact: Lonnie Perez Booth#: 704  
295 Parker St, Springfield, MA 1151  
P:413-543-6911 F:413-543-6989  
Email: lperez@unitechus.com  
Website: www.unitechus.com

UniTech Services Group, Inc. is the world's largest supplier of nuclear protective clothing and accessories. Our nuclear licensed decontamination facilities throughout the US and Europe provide the following services: radiological laundering of protective clothing, decontamination and testing of respirators, and the decontamination of tools & equipment (scaffolding, hand tools, portable HEPA vacuums, etc.). Our products and services are designed to provide our customers cost-effective protection of their workers with minimal generation of radioactive waste.

## **UOP - A Honeywell Company**

Contact: Annalise Sundberg Booth#: 427  
25 E Algonquin Rd, Bldg A  
Des Plaines, IL 60016  
Email: annalise.sundberg@honeywell.com

# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

## URS

Contact: Amy Joslin Booth#: 1100  
106 Newberry St, Aiken, SC 29801  
P:803-502-9799  
Email: amy.joslin@urs-gmos.com  
Website: www.urs.com

URS Corporation is a fully integrated engineering, construction and technical services organization with the capabilities to support the project life cycle -- from inception through start-up and operation to closure. URS has approximately 54,000 employees in a network of offices across the United States and in more than 40 countries.

## US DOE- NV Field Office

Contact: Dona Merritt Booth#: 418  
232 Energy Way, North Las Vegas, NV 89030  
P:702-295-3521 F:702-295-5300  
Email: envmgt@nnsa.doe.gov  
Website: www.nv.energy.gov

The US Department of Energy, National Nuclear Security Administration Nevada Field Office Environmental Management Program is responsible for addressing contamination from historic nuclear testing in Nevada, disposing low-level and mixed low-level radioactive waste from approved generators, and conducting environmental protection and compliance activities at the Nevada National Security Site.

## US DOE - Office of Legacy Management

Contact: Tony Carter Booth#: 816  
1000 Independence Ave SW  
Washington, DC 20585  
P:202-586-3323  
Email: tony.carter@hq.doe.gov  
Website: www.hq.doe.gov

The US Department of Energy Office of Legacy Management (LM) was established in 2003 to provide a long-term, sustainable solution to the legacy of the Cold War. LM is responsible for long-term surveillance and maintenance of environmental remedies, promotion of beneficial reuse, and management of records and information for former weapons production sites across the nation.

## US DOE-Office of Environmental Management

Contact: John Evett Booth#: 614  
1000 Independence Ave, SW  
EM-50, Washington, DC 20585  
P:202-586-3805  
Email: john.evett@em.doe.gov

## US Ecology

Contact: Tricia Watson Booth#: 800  
251 E Front St, Ste 400, Boise, ID 83702  
P:208-319-1622 F:208-331-7900  
Email: twatson@usecology.com  
Website: www.usecology.com

US Ecology is the nation's most comprehensive supplier of cost-effective transportation, treatment and disposal services for low-level radioactive wastes, hazardous and PCB wastes and naturally occurring, accelerator produced and exempt radioactive materials. US Ecology has provided radioactive waste services since 1952, and hazardous waste services since 1968.

## Visionary Solutions, LLC

Contact: Mary Burnette Booth#: Semi B,635  
2553 Quality Ln, Knoxville, TN 37931  
P:865-276-1508  
Email: mburnette@vs.llc.com  
Website: www.vs-llc.com

Visionary Solutions, LLC (VS) is a certified minority business enterprise providing a complete range of transportation, environmental, D&D/construction, and training services for variety governmental and commercial clients. We offer comprehensive solutions including personnel, packaging, equipment, and training for nuclear, hazardous, medical, and classified materials and/or waste projects. VS services are designed to provide safe, effective and compliant solutions to complex technical issues within budget and schedule.

## VJ Technologies Inc.

Contact: Sheetal Alreja Booth#: 1134  
89 Carlough Rd, Bohemia, NY 11716  
P:631-589-8800  
Email: sheetala@vjt.com

Founded in 1987, VJ Technologies (VJT) developed custom imaging software and hardware for government agencies, and later radiographic digital imaging products for NDT markets. VJT's highly-specialized divisions develop and manufacture a complete line of automated x-ray inspection systems for the industrial, electronic, medical and nuclear industries. VJ Technologies delivers a competitive advantage over other companies through our network of global offices. In the 21st century, VJT continues to develop new technologies and solutions designed to enhance NDT products in all of its divisions.

# WM2014 EXHIBITORS IN ALPHABETICAL ORDER

## **Wagstaff Applied Technologies**

Contact: Dan Payne Booth#: 505  
3910 N Flora Rd, Spokane, WA 99216  
P:509-321-3184 F:509-924-0241  
Email: Dan.Payne@Wagstaff.com  
Website: www.WagstaffAT.com

Wagstaff Applied Technologies provides the nuclear industry with mechanical and electrical engineering, fabrication, machining, assembly, and test services. Products include automated material handling equipment, ASME U Stamped pressure vessels, gloveboxes, code-compliant lifting beams, and automated control systems. Wagstaff AT's NQA-1 compliant quality assurance program has been audited and approved by several DOE contractors.

## **Waste Control Specialists LLC**

Contact: Ken Grumski Booth#: 1107  
162 Southridge Dr, Cranberry TWP, PA 16066  
P:724-312-3031  
Email: kgrumski@valhi.net  
Website: www.wcstexas.com

Waste Control Specialists LLC (WCS) has emerged as the nation's leading provider of treatment, storage and disposal services for low-level radioactive waste, mixed low-level radioactive waste, and hazardous waste. The Texas-sized, 14,000 acre, facility is a one-stop shop for radioactive generators across the country.

At WCS, we are providing the most secure, safe and compliant waste treatment, storage and disposal services for our customers and employees by using technical expertise and innovation while incorporating the highest ethical standards.

## **Wastren Advantage, Inc.**

Contact: Ben Thompson Booth#: 519  
1571 Shyville Rd, Piketon, OH 45661  
P:740-443-7924 F:740-443-7979  
Email: ben.thompson@wastrenadvantage.com  
Website: www.wastrenadvantage.com

Wastren Advantage, Inc. (WAI) is an SBA-Certified 8(a) small disadvantaged business that provides focused solutions for managing the entire life cycle of hazardous and radioactive materials. WAI has over 20 years of proven performance in Environmental Remediation, Environmental Consulting, Waste Management, and Facility Management and Operations.

## **Westerman Companies**

Contact: Brett Williams Booth#: 535  
245 N Broad St, Breman, OH 43107  
P:740-569-4143 F:740-569-4111  
Email: Brett.williams@worthingtonindustries.com  
Website: www.westermancompanies.com

Westerman quality, integrity and competitive pricing have made Westerman a longtime leader in the production of tanks and pressure vessels. Capabilities for commercial nuclear power plants components, environmental tanks and casks. Westerman is currently the world's largest producer of enriched uranium hexafluoride (uf6) storage and transportation cylinders. All UF6 cylinders comply with the NRC REG 10CFR71, Subpart H and ANSI N14.1.

## **Westinghouse Electric Company**

Contact: Vicki Kunsch Booth#: 201  
One Energy Drive, Lake Bluff, IL 60044  
P:847-302-3696 F:847-918-0563  
Email: kunschvl@westinghouse.com  
Website: www.westinghousenuclear.com

Westinghouse Electric Company's unique expertise includes integrated services and solutions to the Decommissioning and Dismantling (D&D) and Waste Management to the global nuclear power plant market. We provide state-of-the-art solutions for the treatment and handling of radioactive waste, and offer proven solutions for the storage of low, intermediate, and high-level waste.

Our global workforce is a mix of highly skilled technical and craft personnel who focus on safety and quality to deliver predictably successful results. Our technology offerings range from complex decommissioning and dismantling solutions to unique welding and machining capabilities.

## **Late Booth Update:**

### **Kurion**

Contact: Kaylea Johnson Booth#: 811  
1355 Columbia Park Trail, Richland, WA 99352  
P: 509-737-1377 F:509-737-1383  
Email: Johnson@kurion.com  
Website: www.kurion.com

Kurion is a clean energy company that creates technological solutions that minimize and stabilize nuclear and hazardous waste for safe, secure and permanent disposal.

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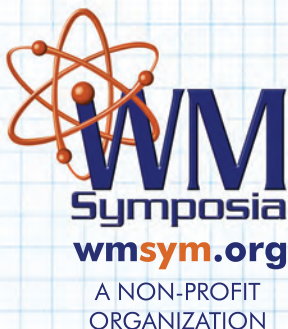


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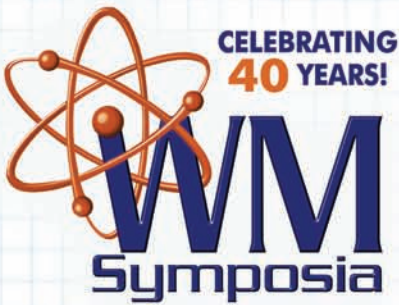
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The Roy G. Post Foundation is a non-profit organization that provides scholarships for students to develop careers in the safe management of nuclear materials and also participate in the annual WM Symposium, which is widely regarded as the premier international conference for the management of radioactive material and related topics. Visit [roygpost.org](http://roygpost.org) or [wmsym.org](http://wmsym.org) for more info.



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- Waste Management Education and Research Consortium
- WNA - World Nuclear Association

The conference is organized in cooperation with the US Department of Energy, The US Nuclear Regulatory Commission, the US Environmental Protection Agency and the US Department of Defense.

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