

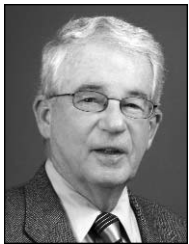


Sunday/Monday

Insight

March 7-11, 2010 The official daily newsletter of the 36th Annual Waste Management Symposium
Vol. 36, No. 1

President Welcomes Waste Management Attendees



As President of Waste Management Symposia and on behalf of the Board of Directors, it gives me great pleasure to welcome you to WM2010. This is the 36th Annual Waste

Management Symposium and the third in our new Phoenix location.

The WM Symposia is a non-profit organization with all proceeds going to further our educational objectives. Last year we were able to make substantial contributions to Universities, students and faculty, and we significantly increased student participation at the conference. This year we have over 40 students attending and 20 presenting papers or posters from 8 universities.

Additionally our subsidiary organization, the Post Foundation, has been able to grant eight scholarships that will be presented at tomorrow's Awards Luncheon. A significant part of the Post Scholarship income is generated from the Post Golf Tournament, so many thanks to those of you who took part in or sponsored the event.

This year we have 89 technical sessions and two continuing education classes at the symposia. Our featured site is Hanford and we have several technical sessions that will be presenting the details of the large amount of work that is being performed there, as well as a high level panel comprised of top DOE Hanford managers and contractors.

We have four sessions devoted to the work of the IAEA and the effectiveness of their E| VIRO| ET program. The IAEA has supported participation from a number of countries including Brazil, Georgia and Turkmenistan and we look forward to learning about these programs.

Our international reach continues to expand. This year, we have over 500 non-US delegates. I'd especially would like to welcome Minister Dr. Al-Musawi from Iraq.

Once again we have a large number of exhibitors and strongly encourage you to visit and review the large range of expertise and services available.

It would be impossible to stage such a large conference without the support of our sponsors. We are extremely

grateful to our sponsors for their continued support and commitment to WMS. We also need your help to improve the conference. First, we would appreciate your efforts to use the feedback forms that are in your packets for any suggestions; no matter how trivial they may seem. Second, we would like you to give us your nominations for the best paper competition by using the nomination forms that are available in all the oral presentation rooms.

The technical program of this conference could not take place without the volunteers (members and supporters) of the Program Advisory Committee. Numbering about 150 active members, these volunteers work hard to pull together a high quality technical program for you to enjoy. Many thanks to those PAC members and to the companies and organizations that allow their members to participate in the conference. WMS exists because of the participation and support of all of you; the authors, speakers, exhibitors, sponsors, volunteers and attendees. We are honored to have you here and thank you for attending.

Hanford is Featured WM 2010 Site

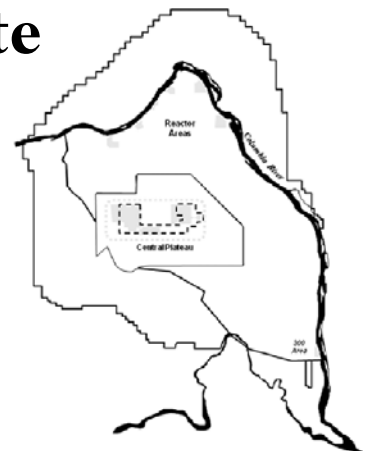
The 586-square-mile Hanford Site in southeastern Washington State played a pivotal role in the nation's defense, beginning in the 1940s with the Manhattan Project. Over 60 years later, the site is now one of the world's largest environmental cleanup projects being managed by the U.S. Department of Energy (DOE) and a team of contractors, each responsible for a different piece of the cleanup scope.

The Hanford Site comprises a plutonium production complex with nine

nuclear reactors and associated processing facilities that left behind a legacy of 53 million gallons of chemical and radioactive waste in underground storage tanks, hundreds of contaminated buildings, thousands of waste sites and burial grounds, more than 2,000 tons of leftover nuclear reactor fuel, and more than 80 square miles of contaminated groundwater.

Hanford contractors are working together to address the long-standing

continued on page 6



Around Phoenix

If you've arrived in Phoenix to enjoy a weekend of relaxation before Waste Management, you might notice lots of activities downtown. It's the weekend of the Heard Museum Guild Indian Fair and Market! One of Arizona's most significant cultural events, Indian Fair & Market is a world-acclaimed festival that draws nearly 20,000 visitors and more than 700 of the nation's most outstanding and successful American Indian artists.

The Fair is the perfect place for families wishing to enjoy a cultural and inexpensive weekend of music, entertainment and food. In addition to shopping, American Indian music and dance performances are held in the museum's outdoor amphitheater throughout the weekend. Food is plentiful at the Fair. Options include American Indian favorites like fry bread, posole stew, piki bread and Hopi stew as well as Mexican and American fare tempt the tastebuds.

Since its founding by Dwight and Maie Heard in 1929, the Heard Museum has 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.

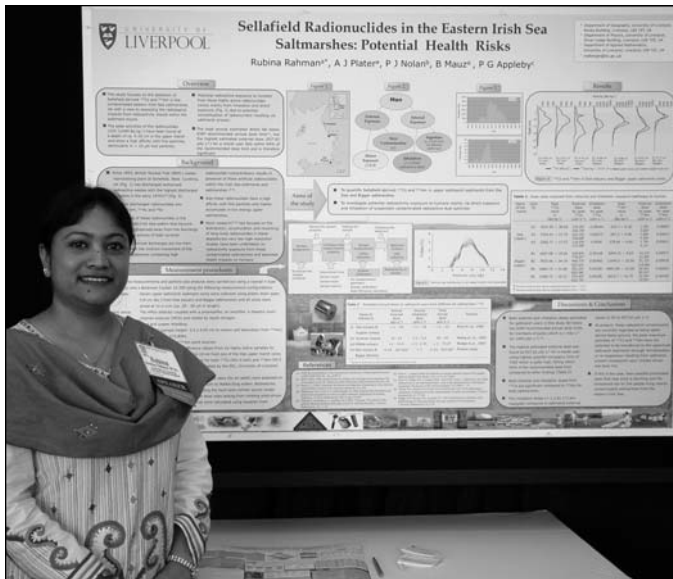
Through innovative programs, world-class exhibitions and unmatched festivals, the Heard Museum sets the standard nationally for collaborating with Native people to present first-person voices. Partnerships with American Indian artists and tribal communities provide visitors with a distinctive perspective about the art and cultures of Native people, especially those from the Southwest.

The Heard Museum is open daily 9:30 a.m. to 5 p.m. Monday through Saturday and 11 a.m. to 5 p.m. on Sunday. The Museum is located in downtown Phoenix at 2301 N. Central Ave.

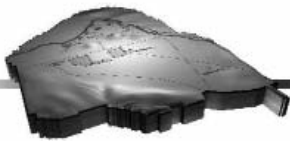
Speaker and Co-Chair Reminders

All **presenters** (oral, panelists and poster) and **session co-chairs** must check-in at the speaker and co-chair counter at the registration desk to confirm their attendance and receive any updates on their session.

A speakers' breakfast is held each morning at 7 a.m. for all oral, poster co-chairs, presenters and panelists for the sessions on that day. This is a chance to meet each other and discuss plans for the session. Tables are marked indicating sessions number.



The student posters will be presented Monday afternoon in the foyer. The student poster winner received a \$500, so stop, take a look, visit with students and cast your vote for your selection for Best Student Poster. Following the poster competition, students are invited to a networking session from 6-7:30 p.m. on level one of the convention center.



Are you a small business looking for a challenge? CH2M HILL is utilizing small businesses to execute its cleanup mission. Since October 2008, CH2M HILL awarded \$477 million to small businesses, including \$190 million in contracts funded by the American Recovery and Reinvestment Act. With another big year of contract awards approaching, **visit www.plateauremediation.com** to find out about upcoming opportunities.

One Team. One Culture.

SESSION PREVIEW

Plenary and Luncheon Speakers Highlight Monday Program

Top level leaders in radioactive waste management will keynote the opening day of WM 2010. The plenary session will feature:

- Dr. Ines Triay, assistant secretary for EM-U.S. DOE
- Dr. Wang Ju, vice president for Beijing Research Institute of Uranium Geology and head, HLW Disposal Program, China National Nuclear Corporation. and
- Bruce Stanski, president, Fluor Government Group.

These panelists will speak on the pressing issues faces by waste management in 2010 and beyond.

Former Senator Pete Domenici is the keynote Speaker for Monday's Luncheon, which will be held on the Third Level of the PCC at noon.

Senator Domenici served six terms as a United States Senator from New Mexico, from 1973 to 2009, the longest tenure in the state's history. During Domenici's tenure in the Senate, he advocated waterway usage fees, nuclear power, and related causes. At the time of his retirement, he was the ranking member of the U.S. Senate Committee on Energy and Natural Resources and the U.S. Senate Appropriations Subcommittee on Energy and Water Development. He was also a member of the U.S. Senate Committees on Appropriations, Budget, and Indian Affairs. He advocated for the



Dr. Ines Triay



Dr. Wang Ju



Dr. Wang Ju



Pete Domenici

mentally ill, having pushed the Mental Health Parity Act of 1996.

Domenici has been an avid proponent of nuclear power and has published two books on the subject: "A Brighter Tomorrow: Fulfilling the Promise of Nuclear Energy" (Lanham, Maryland: Rowman & Littlefield Publishers, 2004), which he wrote; and "Advanced Nuclear Technologies — Hearing Before the Committee on Appropriations, U.S. Senate".

Senator Domenici joined the BPC in January 2009 after retiring from the US Senate. During his 36 years in the Senate, Senator Domenici served as Chairman and Ranking Minority Member of the Senate Budget Committee, Senate Energy and Natural Resources Committee, and the Appropriations Sub-Committee of Energy and Water Development. Now a Senior Fellow at The Bipartisan Policy Center (BPC), Senator Domenici focuses on

energy and national debt issues.

His presentation will outline a 21st century framework for global nuclear power. Additional discussions on his presentations will continue throughout the week and conclude with our featured Session 83, New Power Plant Designs - the Nuclear Renaissance on Thursday. Having Senator Domenici at WM2010 is your chance to hear one of United States greatest leader promoting nuclear power. It is an event not to miss.

Emerging LLW Issues Discussed at Monday Panel

Hot Topics and Emerging Issues in US Commercial Low-Level Radioactive Waste Management is a panel that offers the rare opportunity to hear discussion from entities actively engaged in addressing policy decisions that affect a large portion of the low-level radioactive waste generating community.

The Texas Low-Level Radioactive Waste Disposal Compact Commission is in the middle of the comment period associated with proposed exportation and importation rules published in February 2010 that will establish procedural rules regarding export petitions and agreements to import waste.

The issue of import directly affects the Waste Control Specialists LLC (WCS) compact waste disposal facility that is

scheduled to begin construction in the second quarter of this year.

Importation of Class B/C waste into the Texas-Vermont Compact, if approved, factors into the ongoing discussion regarding down blending of class B/C waste to class A waste to provide enhanced disposal access to a broader range of waste generators.

This panel includes prominent affected entities, including the Compact Commission Chair, Michael Ford, Rodney Baltzer, President of WCS, and Thomas Magette, Senior Vice President of Nuclear Regulatory Strategy at EnergySolutions, Inc.

Classification and disposal of depleted uranium and Army waste management plans will round out the discussion. The panel will be held Monday afternoon beginning at 1:30 p.m.—don't miss it!

International Panel to Discuss Waste Management Issues

Monday morning will feature an international panel of high-level experts discussing waste management issues from their own countries.

Experts from the US, China, Ukraine, Sweden and the UK will be featured at the Monday morning international panel discussing waste management issues from their own countries. The contrast between progress in the U.S and other countries will likely be discussed among panelists. Sweden has chosen its spent fuel deep disposal site and The UK is also engaged in a siting process for a deep repository which has elicited expressions of interest from two potential host communities. China is about to embark on a very ambitious nuclear expansion and the issue of what it intends to do with its waste will be of great interest. Ukraine is of course still dealing with the Chernobyl legacy and it will be interesting to learn if this still has an effect on people's perceptions.

We will hear short presentations from each panelist, to be followed by a moderated Q&A session with audience participation strongly encouraged.

The session will begin at 10:00 and go on until 12:00 noon.

SITE NEWS

What is Portfolio Management?

The Hanford Mission Support Contract (MSC) provides DOE Richland Operations (DOE-RL) and DOE Office of River Protection (DOE-ORP) and their contractors with infrastructure and support services necessary to accomplish the Hanford cleanup mission.

The contract includes five primary site functions:

- Safety, Security and Environment
- Site Infrastructure and Utilities
- Site Business Management
- Information Resources and Content Management
- Portfolio Management

Most of these functional areas perform somewhat self-explanatory functions, but you may not be familiar with the concept, Portfolio Management.

Most of us are familiar with the different projects at Hanford—Plateau Remediation, Tank Operations, Waste Treatment, and River Corridor. DOE-ORP and DOE-RL manage these projects. The Hanford portfolio encompasses all of the “land, facilities, property, projects and work performed and overseen by DOE-RL and DOE-ORP that make up the Hanford Site” (reference Contract I o. DE AC06 09RL14728, Mission Support Contract).

Ken Alkema directs the Mission Support Alliance’s (MSA) Portfolio Management activities that consist of three distinct, yet interconnected scopes. Portfolio Management (PFM) functional areas ultimately provide DOE with subject matter expertise (SME) and optimization tools and techniques to facilitate the DOE decision making process and minimize programmatic risk. This is achieved by performing mission needs analysis; supporting budget formulation processes; reconciling Tri-Party Agreement (TPA) requirements with funding levels; preparing documents for regulatory and stakeholder approval; participating in and documenting results of internal and external reviews, certifications,

baseline change requests, and audits; evaluating individual contract performance and DOE program performance against established baselines; and much more.

Led by James Santo, the Project Acquisition and Support function provides ‘as needed’ project initiation, design, construction, and/or procurement services to enable DOE to “accomplish its owner responsibilities in delivering new projects.” The Independent Assessment and Analysis function, spearheaded by Dave Bratzel, includes diverse, specialized services. PFM’s multi-disciplinary technical experts provide support in areas such as value engineering, project management, project controls, cost estimating and scheduling, ESH&Q compliance, and other special studies.

The largest PFM function is Portfolio Planning, Analysis, and Performance Assessment, led by Morris Legler. Partnering with DOE and collaborating with other site contractors through Integrated Project Teams, PFM will develop an Integrated Site-wide Work Breakdown Structure that organizes Hanford Site activities across projects and contracts into a single Integrated Hanford Life-

Cycle Cleanup Plan and structure. This will provide DOE the opportunity to integrate work scopes and schedules, enabling strategic and alternative decision making, and providing a credible baseline from which DOE can measure project and program performance. “The value of Portfolio Management truly lies in its processes,” said Alkema. “It will provide DOE with a first of a kind ‘Integrated Hanford Life-Cycle Cleanup Plan’ that is dynamic and actionable. For example, DOE will have a Site-wide decision capability with respect to cost and risk mitigations that result from changing funding,” he said.

Key to Portfolio Management will be the development of the Portfolio Analysis Center—an information visualization center that will provide DOE with interactive capabilities for local and remote participants to review and analyze project status, data, and real-time results of what-if scenarios and models. Partnering with Lockheed Martin Enterprise Integration Group, and facilitated by LMSI’s Wyatt Winters, PFM will implement the OMEGA® tool suite in a dedicated facility housed in the Federal Building.

“Nuclear Decommissioning” LinkedIn Group to Hold Networking Session

The “Nuclear Decommissioning” sub-group of LinkedIn is hosting a ‘networking session’ at the WM 2010 Conference on Tuesday, March 9th from 5:00-6:30 PM in Room 102A of the PCC. This group welcomes any and all persons interested in the topic of nuclear decommissioning. We hope to facilitate information exchange, business card exchanges and the opportunity to meet some contacts – new and old - face-to-face while we are all together here in Phoenix at the WM2010 Conference. This ‘mixer event’ is open to anyone and is intended to provide connection opportunities for attendees to meet new contacts for upcoming nuclear decommissioning projects and other business/work related discussions and opportunities. There is no charge and no requirement to formally join the Nuclear Decommissioning Subgroup, though you are encouraged to - so as to continue staying current with fellow professionals working in this business area. Our LinkedIn website is:
http://www.linkedin.com/groups?gid=2530360&trk=myg_ugrp_ovr.

SITE NEWS

Closure Project Reaches Watershed Moment at Hanford

On Dec. 17 and for the first time in years — with x-ray machines gone, metal detectors turned off and armed guards behind bulletproof glass a thing of the past — members of the media and public toured the newly empty vaults at the Plutonium Finishing Plant. Only a month had passed since the CH2M HILL Plateau Remediation Company PFP closure team completed shipment of all the special nuclear material from the facility where plutonium once was produced and stored for the nation's nuclear arsenal.

“The team's tremendous efforts had an impact far beyond the walls of the Hanford Site. They were working for security of the nation. They did this job safely, for the protection of the environment and ultimately for the

decommissioning of the Plutonium Finishing Plant,” said John Lehew, CH2M HILL Plateau Remediation Company president and chief executive officer. “Once we finish the decommissioning of the plant, there's a lot of work to go on after it. The folks that got the job done here will have the opportunity to take on bigger challenges on the site.”

Most of the material once stored at the facility was removed by May 2009. The small amount of nuclear fuel material that remained was shipped to the Savannah River Site and an interim storage area on the Hanford Site. Workers removed the last of the special nuclear material in November. With the plutonium-bearing material gone, workers and

visitors no longer must pass through special security screening, and the security team who once guarded the material has been reassigned to other Hanford Site areas.

This important milestone was marked with praise — from CHPRC, DOE and other government agencies, and congressional staff members — for the workers who completed this significant accomplishment. Among the speakers and guests were David Brockman, Manager of DOE-Richland Operations Office; Dave Reeplog, from the office of U.S. Senator Maria Cantwell; Shawn Bills, from the office of U.S. Senator Patty Murray; Tim Kovich, from the office of Rep. Doc Hastings; and Jane Hedges, Department of Ecology.



Glen Chapman (right), a nuclear chemical Operator for CH2M HILL, answers questions from the media and public.



An empty vault at Hanford's Plutonium Finishing Plant.



DOE Richland Operations Office manager Dave Brockman congratulates CH2M HILL employees on their accomplishments in completing shipments of all the special nuclear material from the Plutonium Finishing Plant.

Fundraising Raffle for Roy G. Post Foundation

Founded in 2000, 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. The WM Conference, held annually in Phoenix, brings together over 2,000 of the world's leading nuclear waste specialists. The Roy G. Post Foundation awards students scholarships to pursue an education in nuclear waste management and provides assistance for students to attend the conference each year.

Be sure to purchase your raffle tickets for the Roy G. Post Foundation's Fundraising Raffle. The list of donated items includes Lunch for Four at the World Famous Arizona Biltmore Resort's Wright's restaurant; Dinner for Two at the Hyatt Regency Phoenix's Compass Room; a Golf Bag donated by Tetra Tech; a deluxe Gift Basket including a Two Night Stay at the Springhill Suites Phoenix; a black leather computer case donated by Longenecker & Associates; two golf outing goodie bags donated by Reef Industries and much more.

Raffle Tickets are just \$10 each or five for \$40 and are available at the Registration Desk.

IMPACT SERVICES, INC.

IMPACT SERVICES, INC.

IMPACT Services, Inc., is a small business enterprise that operates radioactive waste processing facilities in Oak Ridge, Tennessee. At IMPACT, safety is our number one priority. IMPACT's record of safe, compliant, and efficient operations, in conjunction with our commitment to providing customer-oriented waste management services, sets IMPACT apart from other low-level waste processors. IMPACT provides a variety of processes geared toward the volume reduction of radioactive waste. IMPACT's low cost proprietary method for waste processing (Bulk Survey for Release) enables waste generators to reduce the volumes of their low-level radioactive wastes and dispose of low specific activity candidate materials as solid waste. IMPACT also performs a variety of decontamination activities, inspection and characterization services, thermal destruction via pyrolysis, sorting and segregation, profiling, and stabilization/solidification. Additionally, we use the patented OREX™ process on polyvinyl alcohol-based disposable garments, virtually eliminating radioactive waste disposal volume. These combination of services often result in zero disposal volume attributable to the original generator. IMPACT is licensed by the State of Tennessee and provides services to both federal and commercial clients.



FluidTech, a division of IMPACT Services, is headquartered in Las Vegas, NV. Fluid Tech provides a variety of engineered products, technologies, and services ranging from the stabilization/solidification of radioactive wastes, remediation of oil spills on both freshwater and saltwater, suppression of coal dusts, and treatment of hazardous wastes. FluidTech addresses environmental problems for the government and private industry through patented and innovative products and services to manage radioactive, hazardous, and industrial wastes. Fluid Tech's line of "green" certified products offers customers a more environmentally-conscious alternative to traditional waste management approaches.

GeoMelt® Technologies

GeoMelt® technologies are a collection of vitrification processes that result in the destruction of hazardous organics, immobilization of radioactive materials and heavy metals and the means to deal with difficult wastes. The GeoMelt® technologies transform hazardous chemical and radioactive wastes into an ultra-stable vitreous and crystalline material similar to volcanic obsidian that is typically 10 times stronger than concrete. Unaffected by wet/dry or freeze/thaw cycling, the final product is unsurpassed in leach resistance and it is expected to maintain its physical and chemical integrity over many tens of thousands of years. Corrosion tests have demonstrated that the GeoMelt® product is more durable than granite or marble.



IMPACT and our partner, Omega Consultants, Inc., opened the new Secure Support Facility (SSF) in 2009, and are in the RCRA "Part B" application process. Located in Oak Ridge, TN, the SSF facility features over 67,000 square feet of classified office and process space. The SSF will provide the IMPACT/Omega team with the capability to expand our services to include classified support, production, and waste operations. The SSF was designed and built as a limited area (Q) for classified material, low-level, mixed-waste (LLMW) processing and information handling.



www.impactservicesinc.com

Hanford is Featured WM 2010 Site *continued from page 1*

challenges at the site and pursue DOE's vision to significantly reduce the active area of cleanup to 75 square miles or less by 2015. The 2015 vision involves:

- Demolishing facilities to reduce long-term surveillance and maintenance costs
- Completing cleanup along the Columbia River to contain and treat groundwater contamination in the Central Plateau where it will not impact the river
- Shifting resources to full-scale cleanup of the Central Plateau.

Managing the Hanford Site

DOE is accomplishing these cleanup goals with three offices on the Hanford Site: Richland Operations Office (RL), Office of River Protection (ORP), and the Office of Science. Together, these offices are managing large-scale cleanup and research projects to support the mission of protecting human and environmental health by removing the legacy wastes, fuels, and facilities from the site.



David Brockman

Richland Operations Office

The Richland Operations Office manages cleanup of Hanford's River Corridor and the Central Plateau, a task that includes remediating waste sites and contaminated groundwater, decommissioning and demolishing hundreds of excess facilities, cleaning up burial grounds that contain suspect transuranic waste, and placing deactivated plutonium production reactors in interim safe storage.



Shirley Olinger

Office of River Protection

The Office of River Protection manages tank waste retrieval, treatment, and disposal from Hanford's 177 steel tanks, which hold 60 percent by volume of the nation's high-level radioactive waste. The ORP mission is to retrieve and treat Hanford's tank waste and close the tank farms to protect the Columbia River.



Michael Kluse

Office of Science

Also located on the Hanford Site is the Pacific Northwest National Laboratory (PNNL) – one of DOE's ten national

laboratories. PNNL supports the other DOE offices by providing the facilities, unique scientific equipment, and world-renowned scientists/engineers to support fundamental research and innovation, including national security and resource management issues.

Recovery Act dollars at work

The Hanford Site is the recipient of \$1.961 billion in funding from the American Recovery and Reinvestment Act of 2009 (Recovery Act). The DOE Office of Environmental Management gave Hanford's DOE offices direction to spend the money and complete cleanup projects by the end of fiscal year 2011. The funding has accelerated critical cleanup across the site and retained or created new jobs that would not have been possible were it not for Recovery Act funding. In just under a year, the impact of the stimulus has helped create or save over 3,500 jobs, demolish nine facilities (36,185 square feet), remediate six waste sites and install 46 groundwater wells – but there is still plenty of scope to achieve and contracts to award over the next two years.

Who's Who at Hanford

The DOE offices on the Hanford Site rely on a team of contractors to carry out the mission of cleaning up the legacy of nearly five decades of support to the nation's defense.

CENTRAL PLATEAU

CH2M HILL Plateau Remediation Company www.plateauremediation.com

Tasked with the safe, environmental cleanup of the Central Plateau, CH2M HILL Plateau Remediation Company scope includes waste retrieval, treatment and disposal; fuels management; groundwater and vadose zone remediation; demolition of facilities and canyons; and closure of the Plutonium Finishing Plant. Along the Columbia River, CH2M HILL is also remediating the 100K Area, which includes preparing for the treatment of highly radioactive sludge that is now consolidated in the K West Basin, where it will be stored until it can be treated.

RIVER CORRIDOR

Washington Closure Hanford www.washingtonclosure.com

Washington Closure Hanford manages the \$2.4 billion River Corridor Closure Project for DOE's Richland Operations Office. Hanford's Columbia River corridor is an area of roughly 210 square miles along the outer edge of the Hanford Reach National Monument. Cleanup of the River Corridor involves demolishing 486 buildings, cleaning up 370 waste sites, placing two reactors and one nuclear facility into interim safe storage, and managing the Environmental Restoration Disposal Facility, the onsite disposal facility for Hanford cleanup wastes.

TANK FARMS

Washington River Protection Solutions www.wrpstoc.com

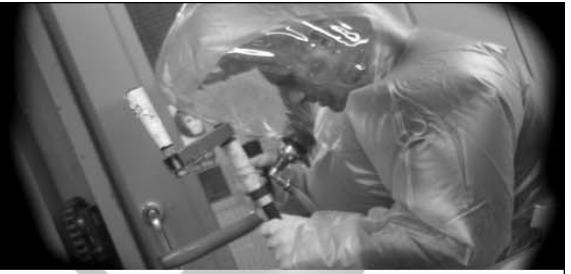
As the prime contractor responsible for safely managing Hanford's tank waste, the WRPS mission is to reduce the environmental risk caused by the waste and prepare it for disposal. The tank contents include waste from years of World War II and post-war production of material for nuclear weapons. The waste will be vitrified into glass logs in a treatment plant that is now under construction at Hanford. WRPS will also be responsible for safely storing the treated waste until permanent disposal facilities are available. The Hanford tank farms are located in the Inner Zone of the Central Plateau, an area of approximately 10 square miles.

SITE-WIDE SERVICES

Mission Support Alliance www.msa-hanford.com

Both the RL and ORP offices are supported by Mission Support Alliance, which provides the infrastructure and site services necessary to accomplish the Hanford Site environmental cleanup. The scope of the contract includes five primary functions: Safety, Security and Environment; Site Infrastructure and Utilities; Site Business Management; Information Resources/Content Management; and Portfolio Management.

National Nuclear Laboratory



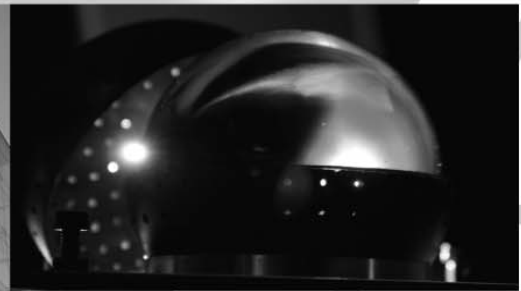
The UK National Nuclear Laboratory's core business is to provide the experts and technologies to ensure the UK nuclear industry operates safely and cost-effectively today and for the future.

Technology resides at the backbone of our business and is closely aligned with commercial acumen to add value for customers and provide a good return on investment.

Our unique combination of highly skilled technical people and access to world-class facilities makes us ideally placed to provide customers with all-round technical capability and flexibility.

Key Services include:

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- Environmental Management
- Homeland Security and Non-Proliferation
- Plant Process Support
- Materials, Corrosion and Nuclear Chemistry
- Nuclear Reactor and Fuel Cycle Technology
- Specialist Analytical Services



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2010 Hodes Award & Lecture Set for Monday

Mr. Larry W. Camper, Director of the Division of Waste Management and Environmental Protection at the U.S. Nuclear Regulatory Commission (NRC), will receive the 2010 Richard S. Hodes, M.D. Honor Lecture Award at 3:15 on Monday afternoon, March 8, during Session 13 in Room 105AB. The Hodes Award recognizes innovations in technology, policy, and practices of low-level radioactive waste (LLRW) management in the United States.

Camper will deliver a distinguished lecture on the challenges and lessons learned in the development and implementation of substantial regulatory and management improvements in

several key NRC regulatory programs. He will also discuss his views on the current and future challenges facing the LLRW industry.

Camper has over 36 years of experience within the nuclear industry, having served in a number of important management positions within both the private and public sectors. He currently serves as the U.S. Representative to the Waste Safety Standards Advisory Committee (WASSC) of the International Atomic Energy Agency (IAEA) and as a member of the Board of Directors and the Program Advisory Committee for the Waste Management Symposia.

“The Commission commends Mr. Camper. Throughout his career, he has developed and supported innovation in regulatory options for the management of LLRW,” said Michael H. Mobley, Chairman of the Southeast Compact Commission. “Larry’s efforts brought about improvements that enhanced public safety, as well as the efficiency and transparency of key NRC regulatory programs. We invite everyone attending the symposium to join us on Monday at 3:15 P.M. to help us honor both Mr. Camper and Dr. Hodes for their outstanding contributions to our industry.”

The Southeast Compact Commission for Low-Level Radioactive Waste Management established the awards program to honor the memory of Dr. Richard S. Hodes, who served as chair of the Southeast Compact Commission from its inception in 1983 until his death in 2002.

Nominations for the 2011 Hodes Honor Lecture Award are now being accepted. The deadline for submittal of nominations is June 30, 2010. Details are on the Commission website at www.secompact.org or you may contact Ted Buckner at 919/821-0500 or tedb@secompact.org.

Panel Sessions Set for WM Opening Day

Several panel sessions are scheduled for Monday’s opening day at Waste Management 2010.

Beginning after the plenary session, Hot Topics in US DOE Environmental Management will feature DOE EM managers discussing current and future issues. Two international panels will also be held Monday morning—Worldwide Perspectives of Waste Management, and the IAEA EM and ER network.

In the afternoon, a panel on the featured site—Hanford will be held. Other panels include Hot Topics in LLW Management and If Not Yucca Mountain—What Else?

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Mobile Arm Retrieval System (MARS)

The first phase of testing has been completed at Hanford on a new piece of equipment that, for the first time, will give tank operations personnel a single tool that will remove waste from Hanford's single-shell waste storage tanks. The device, known as the Mobile Arm Retrieval System (MARS), is a telescoping, robotic arm with a pump at a central mast, and a system of high-pressure water nozzles at the end of an arm that can hydraulically "rake" the waste to the pump.

Retrieval of waste from the aging, leak-prone single-shell tanks and moving it to safer double-shell storage is a primary focus of Washington River Protection Solutions (WRPS), a prime contractor to the Department of Energy's (DOE) Office of River Protection (ORP). WRPS is charged with reducing the risk to the environment posed by Hanford's 53,000,000 gallons of radioactive and chemical waste. The waste is stored in 177 underground tanks, many of which date back to World War II.

"The MARS will allow us to more efficiently and effectively retrieve the hard heeled waste from the tanks using one tool, rather than several," said DOE ORP Assistant Manager for Tank Farms Stacy Charboneau.

"We've demonstrated that MARS can effectively reach and clean not only the tank floor but the tank wall and is capable of using its elbow-joint movement, plus its multi-axle wrist movement to reach around obstacles. This means we can complete the bulk waste removal

and perform the residual waste cleanup necessary to meet or exceed the retrieval goals of the Tri-Party Agreement," said Scott Saunders, WRPS Retrieval Technology and Systems Planning manager.

Depending on the type of waste, MARS can remove waste at rates from 85 gallons per hour up to nearly 1000 gallons per hour and anywhere in between. MARS was tested with materials that simulate the various waste forms in Hanford's tank. These include damp sludges, a hard concrete-like layer and even simulants resembling gravel. "In every case MARS has met or exceeded expectations," Saunders said.

When installed in a tank, MARS will be controlled by an operator using joy sticks, switches, and pushbutton controls. Three remotely controlled television cameras provide the operator a real-time view of the interior of a tank as well as the MARS equipment as it operates. Using the view from the cameras the operator controls the arm and the flow of the sluicing liquids. MARS is capable of using both water and liquid waste, depending on circumstances. The use of liquid waste to mobilize the solids is preferable because it does not add to the existing waste volume already in storage. Outside of the tank there will be a variety of hoses, valves, pumps, motors and tanks.

The first tank to be cleaned out using MARS will be tank C-107, with waste removal scheduled to begin in early 2011. MARS will



be lowered through a 42" riser. To install the riser, workers will cut a 54" hole in the tank. The entire weight of the MARS assembly will be carried by the soil above the dome and no part of MARS will rest on the tank floor.

MARS was designed for WRPS by Columbia Energy and Environmental Services of Richland and fabricated in the Highline Engineering Company facility at the Richland airport.



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Hanford's Largest Groundwater Treatment Facility Under Construction

CH2M HILL is currently on schedule to build the largest groundwater treatment system of its kind in the 200 West Area at the Hanford Site.

In July 2009, CH2M HILL began construction of the new 200 West Area Groundwater Treatment Facility, a project that will use approximately \$80 million of Recovery Act funding.

When it is operational, the facility will pump more than 85 million gallons of contaminated groundwater per month from the 200-ZP-1 and 200-UP-1 groundwater operable

units. The facility will cover an area about the size of a football field and is expected to treat an estimated 25 billion gallons of groundwater beginning in December 2011.

The 200-ZP-1 Groundwater Operable Unit is located in the northern part of the Hanford Site's 200 West Area. From the 1940s through the 1980s, liquid wastes from materials used and produced at Hanford were disposed of in cribs and trenches. The major contaminant — carbon tetrachloride — extends throughout an area of approximately four square miles, and ranges in depth from 180 feet to 400 feet below



Groundbreaking ceremony for CH2M HILL's 200 West Groundwater Treatment Facility. From left: John Lehew, CH2M HILL Plateau Remediation Company President and Chief Executive Officer; Dave Brockman, U.S. Department of Energy Manager; Inés Triay, U.S. Department of Energy Assistant Secretary for Environmental Management; Ron Ault, Metal Trades Department President, AFL-CIO; Mike Gearheard, U.S. Environmental Protection Agency, Region X Assistant Deputy Administrator; and Jay Manning, Director, Washington State Department of Ecology.)

Workshop Announcement. . .

Detecting Radiation in Our Radioactive World

A Teacher Workshop
Science Educators -- High School & Middle School

(biology, chemistry, earth science, physics, physical science, life science, environmental, general science, etc.)

Sunday, March 7, 2010– 8:00 A.M. to 5:00 P.M.

This full-day workshop will prepare attendees to teach the basics about radiation, how we detect radiation, and uses of nuclear science and technology in society. Teachers who complete the workshop will receive a wealth of materials – background information, hands-on activities, supplementary resources – and a Geiger counter. Career opportunities in nuclear science and technology will be highlighted during the sessions.

Mark Your Calendar to Attend

- Get **valuable information** and hands-on activities for teaching about radiation, radioactivity, and nuclear technology in your classroom
- Take home -- **FREE** – a **Geiger Counter** (analog) upon completion
- Receive a **comprehensive teacher handbook** with resources, teaching materials, experiment sheets, visual materials, and **reference materials**
- Meet and **talk with professionals** in nuclear science/technology
- Attendees will receive admission to reception and opening of exhibits at WM2010, Sunday evening

Where Phoenix, AZ - in the Phoenix Convention Center

Sponsors

The American Nuclear Society Public Education Program is pleased to collaborate with WM Symposia, Inc. to co-sponsor this one-day "Detecting Radiation" workshop for educators. The workshop will be held prior to WM2010, the international waste management conference. ● Funding for the workshop is provided in part by individual and organizational contributions to AIS. Additional support provided by Waste Management Symposia and WM2010. ●



Agenda Outline

7:45 a.m.	Registrant Check-in & Continental Breakfast
8:00 a.m.	Workshop Sessions <i>(Lunch and breaks included in schedule.)</i>
	Background Information about Radiation, Sources, etc.
	Activities for the Classroom
	Detecting Radiation – Using the Geiger Counter
	Nuclear Science and Technology Applications in Modern Life
	Uranium mining and processing
	Radioactive Waste & Transportation Issues
5:00 p.m.	Workshop Ends

American Nuclear Society, Outreach Department, 555 J. Kensington Ave., La Grange Park, IL 60526
Phone 708-352-6611 or 800-323-3044; Fax 708-352-0499; E-mail <outreach@ans.org>; Web Site <www.ans.org>

ground surface. Since 1996, an interim pump-and-treat system has been operating to address the contamination.

The selected remedy for 200-ZP-1 combines a new, more aggressive groundwater pump-and-treat system, monitored natural attenuation, flow-path control and institutional controls. This remedy is very reliable over time, is a proven and demonstrated groundwater cleanup technology, and meets CERCLA evaluation criteria.

The new pump-and-treat system is expected to reduce carbon tetrachloride in the groundwater by about 95% within the next 25 years. Natural attenuation offers a cleanup alternative to engineered remediation strategies and will reduce the remaining 5% of the contaminant to safe levels within 100 years.

Insight Newsletter

— Editors —

Linda Ulland,

University of Minnesota, Regional Sustainable Development Partnerships

Linda Lehman,

CH2M Hill Plateau Remediation Company

— Layout / Graphics —

Pam Bradford

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Editors welcome articles or news of interest to symposia attendees.

Deadline 2 p.m.
Monday and Tuesday

— Email —

ullan012@umn.edu

— Phone —

218-820-7258

International Forum on Sustainable Options for Uranium Production (IFSOU) – Improving the Future by Dealing with the Past

Fueling the fleet of new reactors expected with the nuclear renaissance is a parallel renaissance in uranium production. Currently there are 436 nuclear reactors in operation worldwide with 45 new reactors under construction and 131 new reactors ordered or planned. Additionally, another 278 reactors are proposed to generate electricity. World production of uranium comes from many mines in twenty countries, yet two-thirds of the world's uranium comes from just 10 mines.

The International Forum on Sustainable Options for Uranium Production (IFSOU) is a network for members of industry, regulatory bodies and IGOs to discuss and implement steps to achieve more sustainable uranium production practices – and thereby avoid developing new legacy sites. In keeping with the theme of WM2010 – Improving the Future by Dealing with the Past – A session of IFSOU at WM2010 will examine how legacy sites have affected the current economic, regulatory, and

social conditions associated with primary uranium production. The session on Tuesday, March 9 will include:

- The current outlook for global uranium production
- Sustainable and Socially Responsible programs implemented in current uranium production
- Regulatory changes for uranium production
- Programs addressing legacy site remediation
- Barriers to sustainable uranium production

During WM2010, IFSOU will benefit from the insights afforded by the IAEA delegation of EJVIROJET which will be presenting several EJVIROJET panels at WM2010. EJVIROJET is a network of experts, sponsored by the IAEA, that provide expertise to address the technical challenges for radiation site cleanup. The IAEA EJVIROJET lead-off session will be Monday morning, Session 04 - How Can I networks Improve the Implementation of ER Projects? (10:00 – 12:00 AM). Please check your programs for further details and listings of the IAEA and EJVIROJET special series of sessions at WM2010.

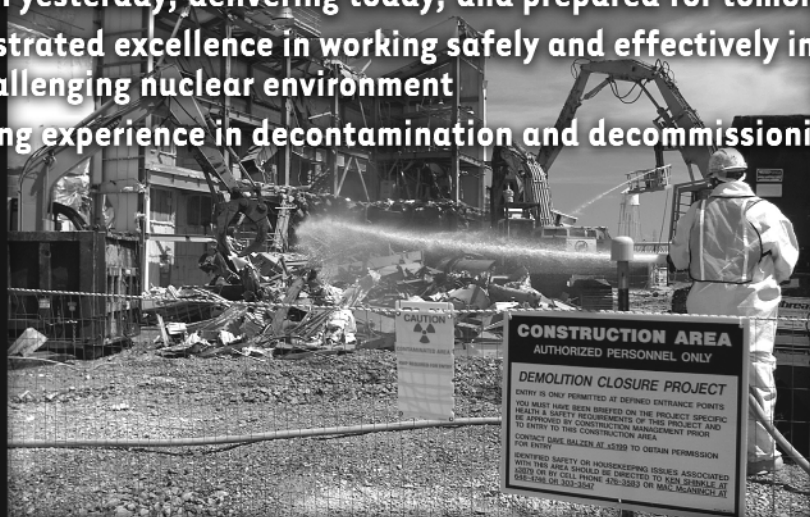
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U.S. Department of Energy Office of River Protection

At the U.S. Department of Energy's Office of River Protection, workers are focused on preparing for operations at the Waste Treatment & Immobilization Plant. ORP is tasked with retrieving, treating and disposing of 53 million gallons of high-level radioactive waste stored in 177 underground tanks at the Hanford Site in eastern Washington State. The waste, a legacy of 45 years of plutonium production for nuclear weapons, will be pumped to the WTP when operations begin in 2019, where it will be treated using a technology called vitrification and turned into a stable, insoluble glass waste form.

The WTP celebrated significant milestones in 2009 and continues to advance construction on its four major nuclear facilities, support facilities and infrastructure. In October, the project surpassed 50 percent complete. It is now more than 52 percent complete.

In 2010, the project will award more than \$100 million in purchase orders, and take delivery of important plant equipment, such as the autosampling equipment for the Analytical Laboratory. These procurement activities will enable construction to

continue to move steadily forward.

In addition, and, perhaps most notably, the WTP will meet a Tri-Party Agreement milestone this year when its skilled craft employees complete the structural steel between the 0- and 14-foot elevations of the High Level Waste Vitrification Facility.

Closing out technical issues also remains a priority. Last year, the project confirmed two key pretreatment processes. Engineers are currently resolving the last major technical issue, which concentrates on mixing technologies.

In preparation for operations, workers are retrieving and transferring the waste from aging single-shell tanks to safer double-shell tanks. Most of the liquid waste has been removed from the single-shell tanks, leaving a sludge and saltcake-like waste form (also called a hard heel) that presents unique retrieval challenges to workers.

Removal of the sludge and hard heel waste began in January from the 12th single-shell tank. In the meantime, workers are installing the infrastructure to begin removing waste from the next tank on the schedule and are well along

with the design of new systems to remove waste from additional tanks, mindful of a legal milestone to remove waste from all 16 tanks contained in an area known as C Farm in 2014.

To meet this important date, a new waste retrieval system has been developed that will significantly improve the rate at which waste can be retrieved from the tanks. Known as MARS, this Mobile Arm Retrieval System is a revolutionary approach to waste removal because it incorporates all of the capabilities of earlier retrieval technologies in a single system, eliminating the need to make repeated entries into the tank to complete waste removal. This will significantly speed the process and save taxpayer money.

Managing all of this requires a careful balance of a number of critical factors, including maintaining the Hanford tank farms to protect human health and the environment while minimizing the total duration and cost of the tank cleanup and considering budget constraints. ORP remains optimistic and continues aggressively pursuing opportunities to ensure project success.



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INDUSTRY NEWS

Porvair Filtration Group Announce Presence at 2010 Waste Management Conference

Porvair Filtration Group, an engineering company specializing in filtration and separation technologies, has announced its presence at the 2010 Waste Management Conference** (March 7th - 11th) in Phoenix, AZ, USA.

Drawing upon many years of problem-solving experience - technical specialists from the Microfiltrex division of Porvair Filtration Group will be on-hand on WM 2010 Booth 633 to discuss and propose filtration / separation based engineering solutions to visitors from the nuclear power generation, fuel manufacture, waste treatment and storage sectors.

The nuclear industry demands special standards of performance and quality. Filtration is often the barrier between the environment and hazardous radiological or toxic processes. Originally chosen by the UK CEGB to replace existing filter systems in the UK nuclear reactor network, our filters now protect vital systems and the environment from harmful particulate around the world.

The Microfiltrex division of Porvair Filtration Group designs complete systems to meet the demands of virtually any application including

powder transport in the fuel manufacturing sector ; final grinding coolant (liquid and air) ; sintering furnace and conversion oven off-gas ; disposable and cleanable filters for active liquors ; fluidized bed venting ; spent fuel dry storage pre-processing ; reactor safety relief valve and containment venting protection and crossflow liquid waste volume reduction.

A brochure detailing further information on optimized filtration / separation solutions for the nuclear industry is available from www.porvairfiltration.com/literature/MFX_nuclear_brochure.pdf.

Porvair Filtration Group is an international leader in the development and supply of materials and products for applications in filtration and separation. Their expertise in a wide range of media and the dedication of their design, manufacturing, sales, test and research teams ensure they are at the forefront of filtration technology, delivering world class performance to the Aerospace, Defence, Nuclear, Energy, Chemical Process, Industrial Process, Water Treatment, Printing and Life Science markets. With offices and manufacturing sites located in the UK,



Europe and the USA combined with a world-wide network of market representatives and distributors, they pride ourselves on our continuous innovation and research to meet global demands.

For further information please contact Porvair Filtration Group on +44-1489-864330 / +1- 804-550-1600 or email info@porvairfiltration.com.

Radiation Resistant 6x Zoom Lens...

The Model 290 Motorised In-Browning Zoom Lens from Resolve Optics Ltd. incorporates a range of useful features to assist operation in environments subject to radiation such as nuclear fuel handling operations, reactor active zones and nuclear waste storage plants.

Developed as a direct replacement to the no longer manufactured Fujinon 12-72mm (6x) non browning zoom lens the Model 290 uses special glass that can withstand long term exposure to high levels of radiation (up to a total dose of 100,000,000 rads) and temperature (55 °C) without discoloration. All functions of the Model 290 are motorised and include

slip clutches and electronic noise suppression. Operating at f/1.8 the Model 290 provides high image resolution and minimum geometric distortion from 400 - 750 nm.

The novel design provides a 6x zoom movement in a very compact form. This provides the lens with the capability to image objects from 800mm to infinity without using add-on adapters. When focused at infinity the lens achieves high image resolution on axis at full aperture throughout the zoom range without refocusing (image tracking).

The high-performance Model 290 CCTV Zoom Lens has been designed for use with single chip 1/2" and 2/3"



CCTV cameras as well as Inewvicon and Chalnicon tubes.

For further information and full technical specifications on the Model 290 In-Browning Zoom Lens please contact Resolve Optics Ltd. on telephone +44-1494-777100 or email sales@resolveoptics.com.

INDUSTRY NEWS

Local Business Receives \$30 Million ARRA Subcontract to Expand Landfill

RICHLAND, Wash.—Washington Closure Hanford has awarded a subcontract worth up to \$30 million to TradeWind Services, a service-disabled, veteran-owned small business based in Richland. The project, which will expand Hanford's Environmental Restoration Disposal Facility by 50 percent, is funded by the American Recovery and Reinvestment Act.

ERDF is an engineered, low-level radioactive and mixed waste disposal facility located in the center of the 586-square-mile Hanford Site and is regulated by the U.S. Environmental Protection Agency. The facility was built in 1996 to accept soil and debris generated during Hanford cleanup operations, primarily from work near the Columbia River.

The facility currently comprises eight disposal areas, or cells, which cover the same area as 35 football fields. Each cell is constructed with bottom and side liners consisting of multiple layers of natural and man-made materials that form an impermeable barrier, along with a system to catch liquids as they drain through the waste materials.

Built two cells at a time, the first pair went online when the facility opened in 1996. Designed to be expanded as needed, the facility has been expanded three times since it opened – in 1999, 2003 and 2007. Each cell measures 500 feet square by 70 feet deep.

TradeWind will add two new “super” cells to the facility. Super cells are twice the size of the existing cells. Cell 9, one of the new super cells, has already been dug. TradeWind will excavate super cell 10 and construct the liner and leachate collection system for both new cells.

The super cells measure 500 feet by 1,000 feet by 70 feet deep. ERDF's current capacity is 11 million tons of contaminated material. Early nine million tons have been disposed to date. With the addition of super cells 9 and 10, ERDF's capacity will be more than 16 million tons.

TradeWind recently was named a Washington Closure Mentor-Protégé. DOE established the Mentor-Protégé



Expansion of Hanford's Environmental Restoration Facility is made possible with funding from the American Recovery and Reinvestment Act. Construction of super cells 9 and 10 will increase waste disposal capacity of the facility by 50 percent and will be completed in September 2011.

program to encourage subcontracting opportunities for small and disadvantaged businesses by pairing them with DOE prime contractors.

As part of the Mentor-Protégé program, TradeWind is eligible to receive significant guidance regarding business development, safety, quality and operations from Washington Closure. In addition, TradeWind selected DelHur Industries as its prime subcontractor on the ERDF expansion project.

DelHur built the first, second and fourth pair of cells at ERDF, as well as constructed Hanford's Integrated Disposal Facility, which will support the Waste Treatment Plant. DelHur is a small business based in Port Angeles, Washington, and most recently completed excavation of nearly 1.8 million cubic yards of soil for ERDF super cell 9.

The TradeWind/DelHur excavation of super cell 10 will begin in early February and will continue through August 2010. Construction of the liner and leachate collection system will begin in April 2010. All work is to be completed by September 30, 2011.

Washington Closure Hanford is a limited liability company owned by URS, Bechtel and CH2M Hill. It operates the \$2.4 billion River Corridor Closure Project for DOE and is responsible for cleaning up 370 waste sites, demolishing 486 buildings, placing two reactors and one nuclear facility in interim safe storage and managing ERDF.

Radwaste Solutions Discusses Radioactive Waste Issues

Radwaste Solutions, a publication of the American Nuclear Society, is a bimonthly specialty magazine containing articles that discuss practical approaches and solutions to everyday problems and issues in all fields of radioactive waste management and environmental restoration. Included is coverage of the generation, handling, removal, treatment, cleanup, and disposal of radioactive (including mixed) waste. Articles are contributed by people working with utilities and those involved in U.S. Department of Energy site work; in the medical, legal, university, consulting, and commercial areas; as well as from all levels of government. Also included are articles on radwaste management programs and practices outside the United States, as well as perspective pieces by industry experts, letters to the editor, and articles on recent academic/technical advances, detailing their immediate or planned practical applications.

With the Yucca Mountain waste repository now most likely history, and the Blue Ribbon Commission ready to begin work to look for a new future for the country's high-level waste and spent nuclear fuel, *Radwaste Solutions* will become an even more important volume in your professional library.

Be sure to read the complimentary issue on Groundwater Contamination, included in your registration packet. Articles in this issue look at the work being done to monitor and mitigate groundwater contamination, both at commercial nuclear power plant sites and at former weapons sites.



WiMAX Technology at Hanford: Updating Infrastructure, Accelerating Cleanup

In direct support of Hanford cleanup and the American Reinvestment and Recovery Act (ARRA) accelerated cleanup initiatives, the U.S. Department of Energy (DOE) Richland Operations Office (RL) is teaming with the Site services contractor, Mission Support Alliance, LLC (MSA), CH2M HILL Plateau Remediation Company and Washington River Protection Services Company to implement a WiMAX-based communications infrastructure at Hanford to augment the existing fiber optic and Wi-Fi-based systems.

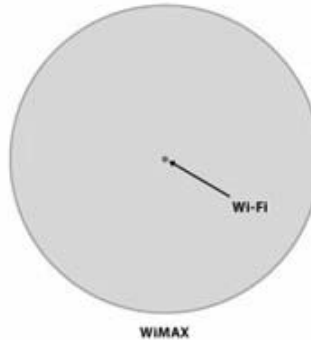
Wi-Fi and WiMAX are both considered last mile technologies that carry signals from telecommunications backbones (in this case hubs or access points) along the comparatively short distance to the users' mobile device(s). WiMAX, however, provides much greater wireless range and connection quality than does Wi-Fi.

The WiMAX system deployed at Hanford provides a large-capacity, secure, high-performance wireless network to serve as the transport vehicle to move information (data, voice, and video) from one place to another across the 586 square-mile site. Compared to Hanford's current systems, the WiMAX system will support a minimum ten-fold increase in users per access point, from approximately 20 to 200 or more. It also increases distances that wireless signals can travel by more than 50 times.

The WiMAX implementation is a component of an overall Site strategy to enhance field automation and increase workforce productivity by providing workers in remote locations with access to the applications, data, and services required to perform all aspects of their work. For example, work package instructions, procedures, and safety information is available electronically in the field to supervisors and crafts people executing work. Work completion and reporting can now be performed in remote field locations, precluding the need to drive to a central office to perform the same tasks.

"With the WiMAX implementation,

Range



the utilization of wireless technologies and applications to streamline processes at Hanford increases exponentially and is in direct support of Green IT initiatives and cost savings," says Frank Armijo, MSA Director of Information Management.

Already deployed across approximately 25% of the Site, the WiMAX solution has been installed in five Project Managers' vehicles, allowing more "hands-on" time in the field. The WiMAX infrastructure has eliminated the requirement to install fiber optic cabling in remote job sites, saving DOE hundreds of thousands of dollars and countless man hours, and preventing the creation of new waste streams disturbance of sensitive ground. The technology is also being used for monitoring, management, and control of systems in remote radio repeater facilities at Hanford.

Additional wireless innovations implemented at Hanford include the Wireless Wind and Solar Powered Platforms (WWASPP). WWASPPs, a Green technology designed and deployed at Hanford, combines alternative energy sources with wireless capabilities to enhance safety and performance in remote monitoring and work execution. WWASPPs have been deployed in Hanford's tank farms and other radiological and/or hazardous areas, keeping exposure ALARA and reducing surveillance costs.

Future activities made possible by the WiMAX implementation include remote monitoring of groundwater

wells, cocooned facilities, electrical utilities, or other sites slated for long-term surveillance and maintenance. With the WiMAX platform in place, data can be continually transmitted, monitored, and recorded without having to engineer in-ground solutions through contaminated areas.

Hanford Fire, Patrol, and Emergency Response personnel will benefit as the technology is leveraged to provide mobility based solutions in the field to improve monitoring, communications, and event response. When fully deployed, the WiMAX system will transport voice, video, and data between an event scene, remote incident command posts, and a central command or response center. Laptop computers in Hanford Patrol or Fire Department vehicles will display and transmit audio and video from an event scene or while in transit, allowing personnel to assess conditions and make decisions rapidly and effectively.

"The implementation of the WiMAX infrastructure will provide a tremendous value to the DOE's Environmental Management Program in support of key cleanup projects and ARRA projects that needed quick command centers and remote field worker automation. Also the DOE Legacy Management Program will benefit with more Hanford facilities turned over for surveillance and maintenance faster than anticipated," says Armijo. "We are excited to be a part of this transformation."