

**ENVIRONMENTAL MANAGEMENT ADVISORY BOARD  
to the  
U.S. DEPARTMENT OF ENERGY**

**PUBLIC MEETING MINUTES**

**U.S. Department of Energy – Forrestal Building Room 8E-089  
1000 Independence Avenue, SW – Washington, DC 20585**

**December 3, 2012**

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The Environmental Management Advisory Board (EMAB) was convened at 9:00 a.m. EST on Monday, December 3, 2012, at the U.S. Department of Energy in Washington, DC. Board Vice Chair Dennis Ferrigno introduced the Board members for the meeting. Chair Jim Ajello participated by phone.

### Board members present:

Dr. Frank Coffman, AECOM Government Services  
 Mr. Paul Dabbar, J.P. Morgan Securities, Inc.  
 Mr. G. Brian Estes, Consultant  
 Dr. Dennis Ferrigno, CAF and Associates, LLC  
 Ms. Jane Hedges, Washington State Department of Ecology and National Governors Association  
 Dr. Carolyn Huntoon, Consultant  
 Dr. Kimberlee Kearfott, University of Michigan  
 Mr. John Owsley, Tennessee Department of Environment and Conservation  
 Dr. Lawrence Papay, Papay Quayle Resources, LLC  
 Mr. Willie Preacher, State and Tribal Government Working Group  
 Ms. Lessie Price, Aiken City Council  
 Ms. Jennifer Salisbury, Attorney and Consultant  
 Mr. Robert Thompson, Energy Communities Alliance

### Board members present by phone:

Mr. Jim Ajello, Hawaiian Electric Industries  
 Mr. David Swindle, Federal Services/URS Corporation

### EMAB Designated Federal Officer:

Ms. Kristen Ellis, DOE Office of Environmental Management

### Others present for all or part of the meeting:

Ms. Justine Alchowiak, Office of Site Restoration, Office of Environmental Management  
 Ms. Allison Doman, Energy Communities Alliance  
 Mr. Kenny Fletcher, Weapons Complex Monitor  
 Mr. Mark Gilbertson, Deputy Assistant Secretary for Site Restoration, Office of Environmental Management  
 Ms. Alexandra Gilliland, e-Management  
 Mr. Bill Levitan, EM Assistant Deputy Assistant Secretary for Site Restoration, Office of Environmental Management  
 Ms. Elizabeth Maksymonko, e-Management  
 Mr. Matthew Moury, Deputy Assistant Secretary for Safety, Security, and Quality Programs, Office of Environmental Management  
 Ms. Tracy Mustin, Principal Deputy Assistant Secretary for Environmental Management, Office of Environmental Management  
 Mr. Mike Nartker, Weapons Complex Monitor  
 Ms. Melissa Nielson, Director, Office of Intergovernmental and Community Activities  
 Mr. Ken Picha, Deputy Assistant Secretary for Tank Waste and Nuclear Material, Office of Environmental Management

Ms. Elizabeth Schmitt, Office of Intergovernmental and Community Activities  
 Mr. Steve Schneider, Office of Tank Waste Management, Office of Environmental Management  
 Mr. David Sheeley, Project Enhancement Corporation  
 Ms. Alice Williams, EM Associate Principal Deputy Assistant Secretary

### LIST OF ACRONYMS

ARP – Actinide Removal Process	GAO – General Accountability Office
ARRA – American Recovery and Reinvestment Act	Hanford – (DOE) Hanford Site
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act	HAW – High-Activity Waste
CRESP – Consortium for Risk Evaluation with Stakeholder Participation	HF – Hydrofluoric acid
DAS – Deputy Assistant Secretary	HLW – High Level Waste
DFO – Designated Federal Officer	HQ – Headquarters
DF – Decontamination factors	HSS - DOE Office of Health, Safety and Security
DNFSB - Defense Nuclear Facilities Safety Board	LANL – Los Alamos National Laboratory
DOE – Department of Energy	LAW – Low Activity Waste
DUF <sub>6</sub> – Depleted Uranium Hexafluoride	LLW – Low Level Waste
D&D - Decontamination & Decommissioning	LNNL – Lawrence Livermore National Laboratory
EM – DOE Office of Environmental Management	MCU – Modular cesium removal unit
EMAB – DOE Office of Environmental Management Advisory Board	NAS – National Academies of Sciences
O413 – DOE Order 413	NRC – Nuclear Regulatory Commission
EPA – U.S. Environmental Protection Agency	OMB – Office of Management and Budget
FACA – Federal Advisory Committee Act	OR – (DOE) Oak Ridge Site
FFA – Federal Facility Agreements	ORNL - Oak Ridge National Laboratory
FY – Fiscal Year	ORP – DOE Office of River Protection
	OSHA – Occupational Safety and Health Administration
	Paducah – (DOE) Paducah Site
	Portsmouth – (DOE) Portsmouth Site

PNNL – Pacific Northwest National Laboratory

PPPO – Portsmouth /Paducah Project Office

PJM – Pulse-jet mixers

SBW – Sodium-bearing waste

SNL – Sandia National Laboratory

SES – Senior Executive Service

SRS – (DOE) Savannah River Site

TRU – Transuranic Waste

TRUM – Transuranic Mixed (TRUM) Organic Waste

WIPP – Waste Isolation Pilot Plant

WTP – Waste Treatment Plant

### OPENING REMARKS

The Environmental Management Advisory Board (EMAB or Board) convened at 9:00 a.m. EST on Monday, December 3, 2012, at the U.S. Department of Energy (DOE) in Washington, DC, by EMAB Vice Chair Dr. Dennis Ferrigno. EMAB Chair Jim Ajello joined by phone. Dr. Ferrigno introduced the EMAB members and DOE representatives, and welcomed new EMAB member Dr. Kimberlee Kearfott. The meeting was open to the public and conducted in accordance with the requirements of the Federal Advisory Committee Act (FACA). More information about EMAB can be found at <http://www.em.doe.gov/emab>.

Dr. Ferrigno reviewed the meeting agenda and reminded EMAB members to recuse themselves from specific discussion topics, as necessary.

### EM PROGRAM UPDATE

Ms. Tracy Mustin, Principal Deputy Assistant Secretary for the DOE Office of Environmental Management (EM), reviewed EM's progress over Fiscal Year (FY) 2012 and recognized the efforts of field employees and contractor teams. Highlights include:

- The opening of the Leadership in Energy and Environmental Design certified Hanford 200 West Groundwater Treatment Facility. It will treat over 1 billion gallons of water annually.
- At Hanford, work at the F Reactor Area was completed and it became the first reactor at that site to be completely remediated.
- At the Savannah River Site (SRS), Tanks 18 and 19 were remediated ahead of schedule.
- The depleted uranium hexafluoride (DUF<sub>6</sub>) conversion facility shipped its one millionth gallon of hydrofluoric acid (HF).
- At the Idaho site, on-site reactor disposal was completed at a total project cost of \$400M less than estimated and disposal issues were resolved with the state.
- Transuranic (TRU) waste shipments have continued regularly. The Waste Isolation Pilot Plant (WIPP) received its 11,000<sup>th</sup> shipment.
- Footprint reduction at K-33 at the Oak Ridge (OR) site is ongoing. This is a firm-fixed price contract and project leadership has been effective. The K-25 facility and the demolition of the North Tower at OR is also being completed.

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- The biomass facility at the Savannah River Site (SRS) is in operation. Coal is no longer needed to make steam and the fuel being burned is coming from local sources. The carbon footprint in Georgia and South Carolina will be notably reduced.
- EM is completing American Reinvestment and Recovery Act (ARRA) projects. These projects have helped EM to achieve a 74 percent footprint reduction across the complex.

EM is focused on line-item construction projects and associated challenges. Specifically, Ms. Mustin noted that Secretary Chu is addressing Waste Treatment Plant (WTP) work and bringing together a technical review by experts.

EM has been largely successful with its operational activities and clean-up projects, with on-time and on-budget completion rate of 90 percent. EM has worked with sites to develop an operational activity policy and implementing protocol. This is done in the spirit of DOE Order 413 (O413) and rigorously applied.

There is continued emphasis on the importance of institutionalizing a safety culture at EM headquarters (HQ) and in the field. Stakeholder communication plays a role, particularly in setting expectations. Stakeholders must be confident that when they raise concerns and offer comments that they will receive a response from DOE. Currently, the Defense Nuclear Facilities Safety Board (DNFSB), sites, and HQ are engaged in planning to strengthen EM's security culture and safety workforce training.

EM's FY 2013 budget is still unclear, but the allocation may be conservative. Terry Tyborowski, Deputy Assistant Secretary (DAS) for Program Planning and Budget, and Barry Gaffney, EM Acting Director for the Office of Strategic Planning, are developing budget baseline scenarios for different lifecycle and cost perspectives. At the Annual Intergovernmental Meeting on December 12 – 14, 2012, EM will debut a strategic planning tool that will demonstrate the broad impacts of alternative budget decisions and funding strategies. The simulation tool is designed to illustrate the impacts of tough choices that will have to be made and to engage stakeholders in a more comprehensive fashion on high-level planning assumptions. EMAB was asked to assist and advise EM on ways to effectively use the new tool in FY 2013.

EM received data from the Partnership for Public Service Employee viewpoint survey that will inform workforce support strategies to improve quality-of-life for employees and make EM more effective. The Partnership and four ad-hoc teams in DOE are developing strategies that address succession planning, employee incentives and motivation, empowerment, and on-boarding and off-boarding. EMAB members are asked to give their perspective on the survey findings and suggest effective approaches.

Despite the challenges affecting the EM Technology Innovation and Development Program, there are still advances that could support EM in specific areas, such as tank waste management and groundwater treatment. She suggested that EMAB could advise EM on the management of technology development. Currently, ways to establish a corporate technology development board are being explored. EM needs insight on this, as well as how to manage it in a way that will instill confidence in the success of the program.

Ms. Mustin introduced Matthew Moury, the DAS for Safety, Security, and Quality Programs. Some safety issues were raised by the DNFSB and recommendations were shared with Secretary Chu. EM has developed a plan and brought it to the DNFSB.

The DOE Office of Health, Safety and Security (HSS) is completing a review of safety conditions at major construction projects. Senior Managers are being trained in safety culture leadership at HQ and in the field. Following this, additional training will flow-down to the workforce, in an effort to continue to build a safety culture. Site managers are now performing an annual assessment of their own safety culture. The results are due in February 2013.

### **Roundtable Discussion**

Mr. Ajello remarked on the potential upside of outsourcing support and gaining independent investment for operations such as WTP management. Ms. Mustin shared that the DOE has a process for this. The SRS project is a successful example. It allowed EM to stay consistent with DOE goals and reduce the carbon footprint. Another example of this is the work at the Hanford site on a natural gas pipeline. Mr. Mark Gilbertson, DAS for Site Restoration, noted efforts to pursue third-party financing. Funds are appropriated upfront for capital projects, and therefore require many steps first. Proper oversight from the Hill and the Office of Management and Budget (OMB) is needed. EM tries to stay innovative in this ongoing debate on third-party financing, leasing, and meeting mission-relevant needs. Considerations include a focus on real property and longer leasing terms.

Mr. Swindle noted that well-performing organizations look at leading indicators as an indication of safe operations, and asked if EM looks at both leading indicators and lagging indicators. Mr. Moury responded that leading indicators were a focus of the memo on safety sent by Ms. Mustin. Most sites have programs that look at lagging and traditional Occupational Safety and Health Administration (OSHA) indicators, but are now also challenged to examine programs and leading indicators. Mr. Swindle noted the importance of safety in project success and management. He offered to be a reviewer and give input.

Mr. Dabbar expressed his interest in the strategic planning communication tool. In small businesses, there are advantages and disadvantages in making quick decisions. In large organizations, not receiving enough input or buy-in can create challenges and, along with communication, can increase in importance as an organization grows. The right data and other issues lead to a complex basis for decision-making.

Dr. Ferrigno reiterated the Board's interest in DOE's strategy for the USEC transition and acceleration of a potential take-over of the Paducah site and the extension of decontamination and decommissioning (D&D) work. EM is continuing to work on a plan for the future transition at Paducah. Ms. Mustin shared that the transition timeframe has been stretched, but did not share the specifics. EM learned about event sequencing from the work done at Portsmouth. Alice Williams, EM Associate Principal DAS, told the Board that the project will be roughly the same size as the Rocky Flats operation and will require work with the community. Stakeholder and regulatory engagement is needed to address the community impact. She shared that it is not too early to plan for the transition and that this will be EM's next big activity. Dr. Ferrigno agreed that the transition plan needs to start soon. Dr. Ferrigno urged that D&D be considered and

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undertaken concurrently, with the examination of large contracts, and revitalization and acquisition strategies.

Ms. Hedges appreciated hearing about EM's successes, particularly about its effective use of ARRA funding, and hoped that this is being communicated. She also recognized the valuable work being done at Hanford by HSS. Ms. Hedges commented on stakeholders' perception that EM is not addressing training needs and opinions. Mr. Moury responded that as part of EM's effort to establish a safety culture, it is trying to strengthen its input and response process. Regarding timeliness, one prior weakness is that people have not been kept aware of progress, especially as the Differing Professional Opinion Process was evolving. EM is now informing those who offer opinions on the technical progress being made. Mr. Moury noted that employee concerns are being addressed, too. At Hanford, national experts have been brought in to examine the program and to make recommendations. Regarding safety and employee confidence, communication and response need to be emphasized. Ms. Mustin noted the importance of addressing communication from a management and leadership perspective, paying attention to what is and is not said, and how information is conveyed. She also noted that it is more about acknowledgement than people demanding quick answers.

Mr. Preacher asked that the removal of sodium-bearing waste (SBW) and calcine at the Idaho site be addressed. Part of a safety culture is advising employees on new projects and safety. Idaho missed milestones set for December. Mr. Moury shared that a decision on the Integrated Waste Treatment Unit (IWTU) at Idaho factored into this. It is better to do things correctly, even if it takes longer. This is EM's approach to treatment plants and reflects a need to work through issues in a systematic manner. Mr. Preacher shared that recently alarms went off at the site, and there was nothing in place to identify the cause for the alarms. He tried to inform the Tribal community, and urged that training program development rests on running processes, conducting tests, and gathering lessons learned. Ms. Mustin responded that there are things that need to be addressed. Idaho does work closely with the DNFSB and with regulators. DOE will make sure that the site operates appropriately. There are some design and training changes needed as well.

Dr. Coffman, reflecting on the WIPP discussion from the last EMAB meeting, asked whether anyone is examining the cost of inspecting drums before shipment, whether there is any positive news in drum characterization, cost reduction, and whether the schedule has increased. Ms. Mustin shared that Frank Marcinowski, DAS for Waste Management, and site personnel see opportunities to improve business. EM is working with regulators and the state of New Mexico to build experience in ways to work smarter together. Dr. Coffman noted that contractors are not always incentivized to trim project budgets, but there may be ways to work with contractors to optimize processes to decrease operating costs, without jeopardizing safety. He suggested that third-party facilitation can help. Ms. Williams shared that New Mexico and Idaho regulators met and developed a path for permits to substantially reduce the characterization of Idaho waste. This was a first-ever summit and generated positive results. Mr. Owsley thanked EM for bringing regulators into the discussion and for looking at ways to reduce costs.

Dr. Papay underscored the importance of safety and the need to overcome the view of those with oversight responsibility that safety is discretionary. Safety needs to be imbued in the workforce and seen as a program element to avoid being cut as a discretionary item.

### **UPDATES ON EMAB FY 2012 WORK PLAN ASSIGNMENTS**

Mr. Mark Gilbertson, DAS for Site Restoration, shared updates on EMAB FY 2012 subcommittee foci, the EM Operations Activities policy and protocol, and an update on risk-informed decision making. These topics are included in the EMAB Acquisition and Project Management Subcommittee (APMS) and Risk Subcommittee work plans.

Mr. Gilbertson reviewed slides presented to the House Energy and Water Development Subcommittee on September 20, 2012. There is a need to maintain an ongoing dialogue and transparency with Congress. ARRA projects have been highlighted and color-coded to demonstrate progress. Mr. Gilbertson pointed out that operations activities offer flexibility for management of ongoing activities in changing budget environments. . EM uses FY work plans that give metrics for allocated funding to document work scope. Metrics should consistent with contract milestones. Current FY work plans are interim and will not be final until FY decisions are complete.

Identifying which metrics are important to report is a challenge with operational activities. While ARRA reporting is done monthly, operational activities are reported to HQ on a quarterly basis. Reports are provided to the field on a monthly basis.

There is policy in development that identifies desired competencies for the management of operational activities. Federal employee managers are selected based on technical capabilities to perform specific functions. EM has a rigorous certification processes for capital asset projects and seeks to maintain Federal Project Director certifications for these individuals. DOE has had difficulty certifying those managing waste as capital projects, as this was driven by DOE Order 413. EM's Operational Activity Manager Competency policy would support private sector Professional Management Institute certification, and the Federal Acquisition Institute, with the help of other entities, to certify project managers. This approach was informed by EMAB input.

EM is working with the field to develop guidance for change control for operational activities.

Mr. Gilbertson transitioned to a discussion of risk-informed decision making, another topic of EMAB review in FY 12. Regulators and stakeholders help EM set priorities in risk-informed decision making. EM wants to complete activities in sustainable ways. Ongoing dialogue suggests that it is best to work within individual site frameworks and to consider site specific requirements. It is challenging to operate complex-wide and to make decisions outside of stovepipes, while still accounting for specific activities.

Due to the anticipated flat budget, EM will have to plan for changes in program direction and at sites, and plan for the possibility that the potential EM may get bigger as facilities throughout the Department become excess. Holistic approaches permit individual site remediation and ensure



transparent and understandable decision-making. EM must maintain an ongoing dialogue to justify and explain decisions about site-based and complex-wide priorities.

In November 2012, the National Academies of Sciences (NAS) published a report on issues within the U.S. Army that can inform EM operations.<sup>1</sup> There is also a 2011 sustainability report that suggests examining long-term priorities, schedules and risks, and the need to include stakeholder concerns in balance with regulatory requirements. Another resource is a report based on observations of a Senior Executive Service (SES) candidate placed at EM for the past several months by the OMB. This report can be shared with the EMAB and factored into its advice.

EM is concerned about fiscal constraints and technical issues, and both are a chance to reengage and maintain open conversations with regulators and stakeholders. Mr. Gilbertson shared that EM is planning third-party workshops with the NAS and utilize EMAB and other stakeholders to inform decision making.

### **Roundtable Discussion**

Mr. Estes also noted the importance of engaging Congress and the value this can provide to EM.

Dr. Coffman noted that some of the EM Projects have substantial longer term energy/utility requirements, and incorporating energy efficiency features (e.g., utility upgrades) could positively impact EM project life cycle costs. He asked about potential energy efficiency cost savings for other EM facilities.. Mr. Gilbertson shared that an annual report driven by an Executive Order communicates goals in water management, fleet management, energy efficiency and energy use. It drives a plan to achieve carbon reduction. EM is in the process of executing a program that directs investments to improve performance in these areas.

In follow up, Dr. Coffman noted that Los Alamos (LANL), Sandia (SNNL), and Livermore (LNNL) have inquired to the private sector about site wide electrical utility efficiency upgrades. Mr. Gilbertson shared that EM is using contracting tools to establish incentives that drive down cost.

Ms. Price asked if other innovative approaches are being used to substitute and compliment laboratory work and possibly reduce the use of national laboratories. Mr. Gilbertson shared that on an energy side, the laboratories are driven by goals and metrics similar to those used by EM. Both are using at performance savings contracts to survey buildings to identify potential returns within a reasonable payback period. EM can pay for improvements using identified savings. EM also works with various energy offices, in the Department on new ideas. For example, SRS and its laboratory engage with energy offices, to drive technologies that may have a broad national benefit.

Ms. Price asked if EM was communicating its successes with the public. Mr. Gilbertson shared that there is a DOE awards process for projects and activities. EM has received more awards

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<sup>1</sup> "Alternatives for Managing the Nation's Complex Contaminated Groundwater Sites" – Available at [http://www.nap.edu/catalog.php?record\\_id=14668](http://www.nap.edu/catalog.php?record_id=14668)

than any other program and has communicated this externally. EM is also a recognized federal government leader for efficiency in IT-related work.

In response to Mr. Owsley's question about DOE resuming five-year strategic plans, Mr. Gilbertson shared that planning continues. Mr. Owsley asked EM to engage regulators in strategic and out-year planning. Previously, five-year plans were published nationally and available to sites. Current plans could show where funds will come from amidst shrinking budgets. Mr. Gilbertson suggested more integration on a national level. The strategic planning visualization tool provides an entry point for those discussions.

In response to Mr. Estes' interest in third-party arrangements, Mr. Gilbertson shared that there have been individual instances of third-party support, such as financing construction at Pacific Northwest National Laboratory (PNNL). Oak Ridge used this approach for lab infrastructure and SRS is working with a community reuse organization to sell excess rail lines equipment. EMAB Risk Subcommittee Co-Chairs Ms. Salisbury and Dr. Huntoon were invited by Dr. Ferrigno to address Mr. Gilbertson's comments. Dr. Huntoon asked about the SES candidate assigned to EM and Mr. Gilbertson explained that OMB assigned this person to understand EM and gain more experience as an SES candidate.

Ms. Salisbury asked how well DOE and EM are establishing and maintaining transparency and openness, particularly to communicate risk and priorities. Mr. Gilbertson cited anecdotal awareness of Congress' desire to stay informed. Employee surveys point out communication needs. Having a five-year budget plan would support transparency. EM is looking for tools to communicate in a complex environment. In addition to the strategic communication tool, EM has also deployed the Advanced Simulation Capability for Environment Management visualization tool, which shows underground plume movement and composite analysis effects to enable simultaneous and overlapping process and regulatory decisions.

Ms. Mustin responded to a question from Mr. Dabbar about EMAB's role in stakeholder engagement, sharing that risk-based decision-making on a national scale is a daily challenge. EM must balance priorities and pressures at sites with national needs. EM has communication and engagement mechanisms. EM needs to communicate from a position of trust. Mr. Gilbertson added that EM has frameworks for communicating, but is not always sure if there is sufficient communication at the individual site level.

Mr. Owsley commented that EM seems intent on a five-year plan with assured funding, but expects that funding may lapse. He shared that the parties involved could convene in a public setting to revisit plans and impacts, including the regulatory impacts. Federal law requires a clean-up schedule and budget, and regulators must address shortfalls. Sites expect this to be transparent and to have understanding of how funding increases or how shortfalls at one site will affect others.

Stretching out a project is one risk of having a flat budget, Dr. Coffman noted. Risk can be minimized by fully funding some projects and by not starting others. Mr. Gilbertson shared that EM's approach is to do risk-informed decision making. For security purposes or to achieve a long-term purpose, some facilities have to be started. This may be due to business aspects or in

order to complete construction work. Stopping construction and putting projects into a safe mode is not always an option, which emphasizes the need for transparent communication and ensuring that site personnel understand complex-wide and site-specific pressures. The strategic planning communication tool can demonstrate this dynamic, but EM is open to other approaches.

Ms. Salisbury recommended that the National Governors Association's Federal Facilities Task Force, could help EM shape decisions. Mr. Gilbertson noted that the Task Force has been helpful in the past, and that EM has to consider how to fit their recommendations into the strategic framework for sites such as Paducah.

## **SUBCOMMITTEE UPDATES**

### Acquisition and Project Management Subcommittee

Subcommittee Co-Chair Mr. Estes provided an update. The APMS has looked at the work plan assignment that Mr. Gilbertson described and had no formal recommendations for this meeting. Mr. Estes shared that the APMS is awaiting EM approval to review future policy and protocol guidance documentation.

The APMS has also examined OMB Circular A-11 that reviewed unused capital project assets.

The APMS addressed views in the latest General Accountability Office (GAO) report issued in October 2012 that looked at ARRA projects. Mr. Estes and Mr. Swindle have met with GAO three times to discuss DOE placement on the High Risk list. The report found that 72 of 78 projects met DOE performance standards within a 10 percent threshold. Challenges identified include inconsistency in project scope, cost, and schedule targets. There is concern that separating projects into smaller projects to fit in an operations project category of less than \$10M removes them from the rigor of O413 requirements, and that a demolition project, for example, should have a detailed schedule and milestones even though its only goal is to demolish a structure. The report listed the F Area Reactor project as a good example. Mr. Estes believes that there are some criticisms that seem overly negative.

Mr. Jack Surash, the EM DAS for Acquisition and Project Management, and his office, have continued holding workshops for federal and contractor managers on EM contracting performance and management. Two workshops have been held, and are the kind of activity that EMAB has been advocating for to encourage stakeholders to collaboratively focus on completing activities on-time and within budget.

Ms. Mustin has a positive view of the GAO report. The report can help EM ensure consistency, defend decisions, and define success. EM will continue to work on the GAO recommendations.

Dr. Coffman asked if the APMS considered funding shortfalls that were not under DOE's control. Mr. Estes responded that the APMS did not examine a detailed list of projects. Rather, the subcommittee looked at shovel-ready ARRA projects. There were implications that shortcuts were taken, but there were no specific concerns about funding not being available. He sees the availability of contract mechanisms in EM as a success because it prevented EM from starting

from scratch. Mr. Swindle added that the examination was of projects with commitments and baselines prior to completion. He noted that most of the criticism from GAO was that designs were incomplete. Dr. Coffman shared that one project that removed soil received criticism. The estimate for how much soil was to be removed was not precise because the project cost baseline was set before site characterization was completed.

### Management Excellence Subcommittee

Co-Chair Ms. Lessie Price reported that the Management Excellence Subcommittee had no formal recommendations for the December meeting and will postpone the report on its activities until the next EMAB meeting. Ms. Price has received positive comments from employees about current approaches and improvements that are being made.

### **TANK WASTE STRATEGY UPDATE**

Mr. Ken Picha, DAS for Tank Waste and Nuclear Materials, shared an update on EM's Tank Waste Program and implementation of the EMAB Tank Waste Subcommittee (TWS) recommendations. EMAB's previous TWS reports and recommendations are available online at <http://energy.gov/em/emab-reports-and-recommendations>.

EM has three major tank waste treatment facilities. The Hanford site is focused on treating 55 million gallons of tank waste. The Idaho facility will treat about 900,000 gallons of remaining waste and is working with the State of Idaho to resume start-up activities in Spring 2013. The SRS site has produced a record number of containers of waste in 2012. The West Valley site is working on a pad to store containers in place at the site.

Tank waste is the largest portion of the EM budget at around 40 percent of the FY 2012 budget; cleanup will take an estimated 35 years and \$90 billion to complete. EM is considering new technologies to reduce costs and EMAB recommendations have helped to move in that direction. Tank waste management requires dealing with uncertainties. EM is looking at technologies to reduce demands on its facilities and awaiting the designation of a path forward for high-level waste (HLW) disposition, per any pending action on the Blue Ribbon Commission report. EM has teamed with national laboratories to develop tank waste guidance that could support EM for an extended period of time.

Over the past two decades, EM's Tank Waste Program has successfully managed tank closure. At Idaho, all tanks are scheduled to be closed within the next two years. There have been four tank closures at SRS, including two this year. Additional work includes developing a framework with the Nuclear Regulatory Commission (NRC) under the National Defense Authorization Act of 2005 to permit the Secretary to limit certain wastes from going into a geologic repository. Sixteen tank retrievals have been completed by EM.

Mr. Picha shared that construction is progressing on waste treatment facilities at Hanford, SRS, and Idaho. Work at Hanford will produce a large amount of low activity waste (LAW), but the estimated number of canisters is unknown. Some Transuranic Mixed (TRUM) Organic Waste

could be considered TRU waste and a contract has been developed for disposal at WIPP. There may be eight to 11 tanks for which this is feasible.

Construction of the Pretreatment Facility at Hanford is about 40 percent done, and should be completed by 2016. The LAW facility is about 70 percent complete and should be finished by 2014. There is consent decree milestone for completed analytical lab construction. The HLW waste facility is about 40 percent complete and will advance further after addressing some technical issues. The laboratory is around 75 to 80 percent complete.

There are concerns about pulse-jet mixers (PJM), erosion and corrosion, and whether cells can last for 40 years. Earlier in 2012, Secretary Chu visited the Hanford Waste Treatment Plant (WTP) to discuss safety culture. Recommendations have been received from the DNFSB about safety concerns. EM conducted a safety review across the complex and the Secretary announced the need for a safety-oriented culture. He toured facilities with large-scale interest in PJM. This was about the same time that DOE was completing a report on the Gulf Oil spill and was still involved in the Fukushima recovery effort. Secretary Chu asked for assurance that black cells, in particular, would operate reliably. He convened a team of technical experts and sub-teams with participants from the DOE Office of River Protection (ORP), national laboratories, industry, and academia to address technical issues that are driving WTP completion. The roles of the teams are as follows:

- Team 1 – Determine the test plan to prove that PJM will work, and the desired size and characteristics of the testing vessels
- Team 2 – Examine the 40-year design life, the capabilities to detect technical issues, and the flexibility to bypass a vessel if there is an issue with it
- Team 3 – Conduct black cell analysis and look at issues with PJM
- Team 4 – Focus on erosion, looking at past resolution of this issue and the potential for the formation of solids in tanks causing erosion or corrosion of piping and components
- Team 5 – Determine the need for pre-treatment based on problems with components such as hardness or size, and the need to screen and separate these out to avoid issues

ORP is examining supplemental treatment, secondary waste form selection, and system changes for immobilized waste treatment. It may be expected that 25 percent of each vitrified canister will only support up to 25 percent waste loading. If this can reach 40 percent, it will reduce the number of canisters. EM has not shifted from the HLW repository standard, but Mr. Picha thinks that there is room to do so. For instance, SRS has gone to 45 percent. ORP has also looked at separate LAW operations and at farm capability to pre-treat waste and send it to the LAW waste facility. Once separated, there may also be some waste that could go directly to the HLW facility. ORP is also considering TRU waste packaging and opportunities for packaging eight to 11 tanks of material.

Disposition processing at SRS may increase, due to new technologies in all facilities, except for the Salt Waste Processing Facility. The actinide removal process (ARP) may start-up in 2014. There have been issues with vendors for key vessels leading to a delay. A new baseline is being established, but SRS is also looking at increased production in the ARP / modular cesium removal unit (MCU). A next generation solvent is being used for ARP / MCU with higher

decontamination factors (DF) than cesium. Testing showed DFs approaching  $10^6$ . More testing could lead to use of the solvent to increase production. There are also improvements in glass loading, melter throughput, and the saltstone facility to increase reliability and capacity.

Start-up activities began at the Idaho site in April 2012, but stalled due to off-gas system issues that led to design changes. It is hoped that Idaho will start-up again in April 2013. Mr. Picha foresees that it will take one year to treat 900,000 gallons of liquid SBW.

Mr. Picha shared that EM has international partnerships. Support includes HLW expertise in the U.K., South Korea, and France.

The Tank Waste Corporate Board held its first meeting in August 2012 in Idaho Falls, ID. The Board now focuses on technology, and includes of the Tank Waste Closure Working Group and the Tank Waste Performance Measures Working Group.

Mr. Picha provided a handout of recommendations from the EMAB Tank Waste Subcommittee with EM responses.

*2011-EM TWS 003-OA-01: It is recommended that DOE seek (with Office of Management and Budget support) multi-year appropriations with no control points from Congress (versus year-to-year funding with control points) for mission-critical projects for both SRS and the Hanford Tank Farms Program.*

EM's response to 2011-EM TWS 003-OA-01 was to decline the recommendation as written. He shared that EM strives for flexibility such as having a single control point for the WTP project. He liked the idea and shared that EM will do what it can.

*2011-EM TWS 003-OA-02: It is recommended that DOE seek to standardize life cycle cost evaluations system-wide when evaluating alternatives for technology and/ treatment system capital projects, regardless of expenditure level.*

EM will pursue standardizing lifecycle costs through the Tank Waste Corporate Board. Informal discussion has shown that consistency with SRS and Hanford systems plans allows for guiding activities to fulfill the mission. EM will pursue this as an initiative and prepare a systems guide.

*2011-EM TWS 003-OA-03: It is recommended that DOE proceed with a preliminary design funding request for execution of Vision 2020 to allow a single LAW melter to operate significantly earlier than in the baseline; on or about 2016.*

EM plans to follow this recommendation and it is consistent with direction from the Secretary.

*2011-EM TWS 003-OA-04: EM-TWS recommends that DOE-SRS and ORP be extra vigilant in applying resources to additional project developments to the detriment of mission-critical system construction and operations (i.e., SWPF and WTP).*

This recommendation aligns with 2011-EM TWS 003-OA-03. EM will evaluate feeding the LAW melter, with a business case analysis. Pre-treatment capability at tank farms is needed, and EM would need additional facilities and a micro-filtration capability. Mr. Picha shared that EM does not want to lose sight of WTP as its cornerstone. Preparing the LAW business case will determine the different capabilities.

Mr. Picha shared that treatment capabilities may need to start sooner than planned, in response to Dr. Ferrigno's comment that the business case may have changed in shifting from a double-shell tank to a single-shell tank. Mr. Picha also confirmed the need for pre-treatment.

Dr. Ferrigno brought up the option of separating and using a portion of the pre-treatment facility in a construction and pre-treatment site instead of at-tank pre-treatment, similar to industry use of facilities. Black cell and PJMs could deal with tough materials and other tanks could deal with soft material. Mr. Picha shared that this has not been discussed, but the contractor working with ORP is looking at direct-feeding LAW and the type of facilities needed upstream of a pre-treatment facility to segregate materials. This will be considered by a team that is looking at separate HLW and LAW operations. A similar approach is being done at West Valley with operations contiguous to the vitrification cell.

Mr. Picha shared that a group of technical experts and laboratory personnel offered recommendations and that construction reviews for the WTP and SBW facility were being reviewed. EM is taking a systematic view of HLW systems and considering all recommendations holistically to see where they may be applicable.

Mr. Picha cited the value of reviewing the EMAB and Tank Waste Subcommittee recommendations. He shared the major recommendations that EMAB had offered. As an example of next steps, EM is working with regulators to discuss operations. Mr. Picha will share information with the EMAB electronically.

Mr. Picha commented that the integration of activities is never complete until an activity is done. The Tank Waste Corporate Board will be a major resource for EM. Collaborative technology development with sites will continue, for example, there is a pilot to add PNNL and SNNL to help Hanford's tank mission and to transition this to other tanks. Mr. Picha reported that canister work at SRS has been successful, but work remains with salt waste processing. SRS will continue to make some salt waste at the Defense Waste Processing Facility.

### **Roundtable Discussion**

Dr. Papay commented that EM is obligated to provide a simple or complex formal response to all 43 of the EMAB Tank Waste Phase report recommendations. Today's presentation is the first technical discussion of the EMAB June 2011 report. Mr. Ajello and Mr. Swindle supported Dr. Papay's comments.

Dr. Ferrigno noted that a HAZ-OPS industry review is not necessarily being thoroughly completed by DOE and its contractors at Hanford; however if one were to access the contractor commercial industry units, HAZ-OPS reviews are common practice in OIL & Gas, Chemical and

Mining Industries. A review can prevent future potential operational and safety issues. Additionally, he suggested that DOE consider a separate commissioning contract before the 2016 deadline including detailed training and operational readiness procedures. Mr. Picha responded that one thing EM has done is to establish a One- System group comprised of BNI and Washington River Protection Services as the tank farm operator. The group is headed by a representative from the tank farm and they have offices designed to remove organizational barriers to look at strategies. Dr. Ferrigno commented that this may not be totally sufficient as the mission already requires this.

In response to Mr. Preacher's interest in learning about black cells, Mr. Picha explained that this was originally proposed as a private effort by BNFL, Incorporated. They were the primary contractor for processing a certain percentage of waste by volume and by radioactivity. They would be paid for each canister based on risk levels. Ultimately, the dollar value per canister represented a project cost that at the time was seen as untenable. In the U.K., BNFL used basic mixing and transporting technologies with no moving parts in the facilities up until about 2003. There was an incident in 2003 and they are working through one now.

## **CONTINUATION OF SUBCOMMITTEE UPDATES**

### Risk Subcommittee Interim Report

Subcommittee Co-Chairs Ms. Salisbury and Dr. Huntoon shared an interim report prepared by the EMAB Risk Subcommittee. The Subcommittee responded to two tasks. The first was to address the risk-informed prioritization process / system proposed for the OR site by the Consortium for Risk Evaluation with Stakeholder Participation (CRESP). The second was to look at EM's incorporation of sustainability into planning and decision-making for environmental clean-up projects, building on what the U.S. Environmental Protection Agency (EPA) has developed, while actively engaging stakeholders.

CRESP's final report for the DOE has been internally reviewed, but has not been issued as a public document; therefore the subcommittee cannot make specific recommendations on the report at this time. Formal recommendations will be presented for the full EMAB's consideration at a later date.

Regarding sustainability, the Subcommittee reviewed the NAS report on sustainability prepared at the request of the EPA. The NAS National Research Council is incorporating the EPA report into a broader NRC study, *Sustainability Linkages in the Federal Government*. The Subcommittee focused on the findings it was able to present to the EMAB currently.

The Subcommittee observed that there is increasing pressure on EM's program direction funding, which impacts its ability to reach milestones. This situation is further complicated by the lack of consistency and reliability of out-year budget forecasts.

EM assumes 50 percent of its budget as "minimum safe" and non-negotiable due to static "landlord" or "mortgage" costs. There may be potential opportunities for savings and budget



efficiencies that could make more money available for clean-up. This idea is reinforced by the SRS biofuels initiative and comments from Mr. Gilbertson about fleet management.

Compliance with Federal Facility Agreements (FFA) and relevant federal laws drive much of the EM program, but diminishing budgets for clean-up present unavoidable delays. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides renegotiating milestones, but it presupposes that requirements in CERCLA are going to be met. One potential recommendation considered by the Subcommittee is to encourage DOE to make a good faith effort to request additional funding from Congress to meet each milestone. The Subcommittee suggested that only then will it be appropriate to have agreements for further negotiation.

It was observed that the CRESP model evaluated seven projects at OR. CRESP discussed project definitions and the list of documents that speak to the project itself. CRESP encountered difficulties in gathering available documentation. The Subcommittee felt that a project summary with an appendix listing all of the documents that contain project information would be helpful. These summaries can also help to inform the public and to explain the risk rating that was associated with a specific project.

A preliminary observation was that transparency, communication, buy-in, and involvement in EM activities by states, tribes, and other groups will help to better inform decisions at EM sites.

Mr. Thompson reflected on the EMAB discussion about transparency and trust, noting that local communities have a role to play in decision making. He is concerned that independent third parties are not entirely independent and rely on the DOE as a source of funds for operations. Dr. Papay responded that the NAS asks participants to declare and discuss any biases and conflicts upfront. Ms. Salisbury responded that a solution may be to have all parties in the discussion agree on using a third-party evaluator and a specific third-party candidate. Funding the third-party is one technicality.

Mr. Owsley added that CRESP was not designed as a tool for national risk prioritization. He clarified that it was assembled to manage a dispute between the DOE, EPA, and the State of Tennessee. Their model is based on different perspectives on risk. CERCLA requires compliance and with other recommendations there is a balance of criteria. State and community acceptance are also factors. CRESP was not designed to prohibit stakeholder participation in the decision-making process but to identify a preferred alternative. Mr. Thompson added that the CRESP product was used for OR and may help inform other communities of risk. Ms. Salisbury hopes that the final CRESP report can be used by the Subcommittee in its formal recommendations.

Mr. Preacher commented that Tribes such as those by Hanford discuss transparency and building trust. Many future EM missions such as waste transportation still involve risks. He suggested that if the model at OR works, it may be useful to other sites.

Regarding the observation that EM assumes 50 percent of the budget as “minimum safe” and non-negotiable due to static landlord or mortgage costs, Ms. Mustin shared that EM wants to be

creative and incentivize contractors, and shift funds into clean-up. David Huizenga, Senior Advisor for EM, is pushing this idea and wants to maintain the “minimum safe” while being open-minded and self-critical to drive clean-up work.

Ms. Mustin commented that the CRESP model was not perfect, as it does not give information for use in a larger context. EM’s strategic planning communication tool can be a source for informing discussions. She is concerned about over-reliance on models and databases, and suggested that common sense, reasoning, and discussion will drive EM. Ms. Salisbury expressed recognition that there are varying viewpoints for the Subcommittee to address.

Ms. Mustin added that EM is not using risk-informed decision making alone, but balances this with business cases, the affordability of solutions, and public acceptance of options. Mr. Owsley added that CRESP would not give the needed answers, but may serve as a vehicle for hearing opinions and ranking issues. There is potential national use for a standardization of this information. As an example, it can determine if there is sufficient information to convey a risk to the public, enable the assignment of resources to mitigate risk, and ensure the continuity of protection while a solution is being developed.

Mr. Bill Levitan, EM Associate DAS for Site Restoration, noted that risk is a main factor in EM’s criteria for decision making, but there are also site-specific factors to consider. The NAS study for the U.S. Army Corps of Engineers on groundwater clean-up balanced risk, cost, and other factors. The CRESP tool across sites is accounting for all site-specific details.

Dr. Coffman suggested that the Subcommittee’s draft recommendation be modified to urge DOE to first request funding for those tasks that have Facility Compliance Agreements. Ms. Salisbury shared that the intent of the recommendation is that a request should be made to meet milestones and obligations. Mr. Owsley commented that CERCLA is vague in identifying the culpability of a request. It may be a site request for which DOE manages the budget, or it may be that as DOE receives funds equal to its request it provides a site with funds equal to the site’s request. He commented that DOE’s decision is its own choice. Mr. Levitan responded that DOE must request to the President a compliant budget. DOE works with OMB examiners to demonstrate that funding for compliance is matched to milestones.

## **PUBLIC COMMENT**

None.

## **BOARD BUSINESS**

### Discussion of FY 2013 Work Plans

Based on the meeting discussions, EMAB’s Management Excellence Subcommittee, APMS, and Risk Subcommittee will continue to operate in FY 2013. Additional subcommittees will be convened to address Ms. Mustin’s requests for advice on EM’s Science and Technology programs and strategies, and the strategic planning communications tool developed by EM’s Office of Program Planning and Budget.

Formal work plans for the subcommittees' FY 2013 are under development.

### Subcommittee Assignments

Dr. Kearfott and Dr. Coffman agreed to co-chair the EMAB Science and Technology Subcommittee. Mr. Owsley recused himself from co-chairing the subcommittee due to the potential for pilot work at OR.

EMAB Vice Chair Dr. Ferrigno suggested that subcommittees follow the same structure and work processes, and work with associated DAS leadership to develop plans for moving forward.

Ms. Ellis suggested expanding the Risk Subcommittee work to include a review of the strategic planning communication tool. The software can be reviewed by those members at the Annual Intergovernmental Meeting. Ms. Price added that keys to communication are trust, inclusivity, relationships, and acknowledging that partners have been heard. Dr. Ferrigno suggested that the members of the Risk Subcommittee could support the Communication Subcommittee. He suggested that Ms. Hedges could serve as the Chair.

Dr. Ferrigno suggested retiring the Tank Waste Subcommittee. The members can participate in relevant discussions, as needed.

### Approval of EMAB public meeting minutes from May 31, 2012

Mr. Estes moved that the meeting minutes be accepted, Dr. Huntoon seconded the motion, and the minutes were adopted by the Board members who participated in the May 31, 2012 meeting.

### Date and location for the next EMAB meeting

The next meeting is tentatively scheduled for June 2013, in Augusta, GA.

### Adjournment

Ms. Salisbury moved adjournment of the meeting. Ms. Price seconded the motion, and adjournment was approved by the Board. Dr. Ferrigno adjourned the meeting at 3:15 p.m. EST.

I hereby certify that, to the best of my knowledge, the foregoing minutes are accurate and complete.



\_\_\_\_\_  
Dennis Ferrigno  
Vice Chairman  
Environmental Management Advisory Board



\_\_\_\_\_  
Kristen Ellis  
Designated Federal Officer  
Environmental Management Advisory Board

These minutes will be formally considered by the Board at its next meeting, and any corrections or notations will be incorporate into the minutes of that meeting.