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

PUBLIC MEETING MINUTES

DoubleTree Hotel– Richmond I & II
2651 Perimeter Parkway–Augusta, GA 30909

June 14, 2013

TABLE OF CONTENTS

The Environmental Management Advisory Board (EMAB) was convened at 9:00 a.m. EDT on Friday, June 14, 2013, at the DoubleTree by Hilton Hotel in Augusta, Georgia. Board Vice Chair Dennis Ferrigno introduced the Board members for the meeting.

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
Ms. Lessie Price, Aiken City Council
Ms. Jennifer Salisbury, Attorney and Consultant
Mr. David Swindle, Federal Services/URS Corporation

Board members present by phone:
Mr. Robert Thompson, Energy Communities Alliance

EMAB Designated Federal Officer:
Ms. Kristen Ellis, DOE Office of Environmental Management

Others present for all or part of the meeting:
Mr. Don Bridges, SRS Citizens' Advisory Board
Ms. Gerri Flemming, SRS
Ms. Alexandra Gilliland, e-Management
Mr. David Huizenga, Senior Advisor for Environmental Management
Ms. Sayoh Mansaray, e-Management
Rick McLeod, SRS CRO
Ms. Mindy Metts, SRS CRO
Dr. David Moody, SRS
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. Harold Simon, SRS Citizens' Advisory Board
Ms. Patricia Suggs, SRS
Ms. Alice Williams, EM Associate Principal Deputy Assistant Secretary

LIST OF ACRONYMS

ARP – Actinide Removal Process
CRESP – Consortium for Risk Evaluation with Stakeholder Participation
DAS – Deputy Assistant Secretary
DFO –Designated Federal Officer
DNFSB - Defense Nuclear Facilities Safety Board
DOE – Department of Energy
D&D - Decontamination & Decommissioning
EM – DOE Office of Environmental Management
EMAB – DOE Office of Environmental Management Advisory Board
EPA – U.S. Environmental Protection Agency
FACA – Federal Advisory Committee Act
FFA – Federal Facility Agreements
FY – Fiscal Year
GAO – General Accountability Office
GDP- Gaseous Diffusion Plant
Hanford – (DOE) Hanford Site
HAW – High-Activity Waste
HLW – High Level Waste
HQ – Headquarters
LANL – Los Alamos National Laboratory
LAW – Low Activity Waste
LLW – Low Level Waste
MCU – Modular cesium removal unit
NAS – National Academies of Sciences
NRC – Nuclear Regulatory Commission
OMB – Office of Management and Budget
OR – (DOE) Oak Ridge Site
ORNL - Oak Ridge National Laboratory
ORP – DOE Office of River Protection
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
SRS – (DOE) Savannah River Site
TRU – Transuranic Waste
WIPP – Waste Isolation Pilot Plant
WTP – Waste Treatment Plant
USACE – US Army Corps of Engineer

OPENING REMARKS

The Environmental Management Advisory Board (EMAB or Board) convened at 9:00 a.m. EDT on Friday, June 14, 2013, at the DoubleTree by Hilton Hotel in Augusta, Georgia by EMAB Vice Chair Dr. Dennis Ferrigno. EMAB Chair Jim Ajello was unable to join. Mr. Robert Thompson joined by phone. Dr. Ferrigno introduced the EMAB members and DOE representatives. 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://energy.gov/em/services/communication-engagement/environmental-management-advisory-board-emab.

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

SAVANNAH RIVER SITE

On June 13, 2013, EMAB members and staff visited the Savannah River Site (SRS). Ms. Karen Guevara, Assistant Manager for Infrastructure and Environmental Stewardship for the Savannah River Site, gave a brief overview of the Savannah River Site. She started by welcoming the EMAB to the Savannah River Site.

Ms. Guevara noted that one of the interesting dynamics of the site is that the regional support for the site extends beyond South Carolina because of its proximity to Georgia. EMAB visited the biomass cogeneration facility, one of the largest biomass cogeneration facilities in the federal sector. The energy efficiency programs within DOE are delighted with the biomass cogeneration facility and the reduction of the site burning fossil fuel. This is an example of how SRS is truly a DOE site. Another construction projects, is the mixed oxide fuel fabrication facility (MOX). MOX is outside the EM program and is being constructed by the National Nuclear Security Administration (NNSA). But, there are nuclear EM materials slated for disposition there. This shows the interplay between things within the purview of EM program and other programs within the Department of Energy (DOE).

SRS is an aging site with infrastructure issues. A sinkhole has developed in one of the major infrastructure arteries. Traffic has to be temporarily diverted on one of the major roads throughout the site, while sections of this critical road are repaired These types of issues are important for advisory boards to see because it demonstrates what restricting federal spending or baselining some of the EM budget would mean to the site's ability to continue to function through to an end state to complete the cleanup.

Ms. Guevara thanked EMAB for taking the time and the effort to visit some of the sites and actually see the brick and mortar of what they are actually advising.

SAVANNAH RIVER SITE CITIZENS' ADVISORY BOARD

Mr. Don Bridges, Chair for the Savannah River Site Citizens' Advisory Board (CAB), which is chartered under the EM Site-Specific Advisory Board, gave a brief overview of the CAB. He explained that the CAB focuses on two aspects of cleanup, determining what the priorities of cleanup are and determining the progress of cleanup. Mr. Bridges noted the membership of the CAB reflects diverse viewpoints, professions, and community representation, from both Georgia and South Carolina, who all have a very robust involvement. The CAB is one of eight EM Citizens' Advisory Boards and is the second largest, behind Hanford.

Since the CAB was formed in 1994, the board submitted over 300 recommendations. These recommendations have covered soil and groundwater, nuclear waste and remediation. These recommendations and additional information on the CAB may be found at http://cab.srs.gov/srs-cab.html.

The CAB divides activities into four issues-based committees: 1) Facilities Disposition and Site Remediation; 2) Nuclear Materials; 3) Strategic & Legacy Management; and 4) Waste Management. The CAB is routinely briefed by DOE and site contractors; they also communicate regularly with regulators. Mr. Bridges believes that the CAB has been effective in providing input to DOE and that the CAB is sensitive in reflecting the views of the citizens.

The CAB is dealing with these issues with an increasingly limited and uncertain budget. The delay of the completion of the Salt Waste Processing Facility (SWPF), the processing of spent nuclear fuel and its limited disposition, and the utilization of H-Canyon are top issues for the CAB. Mr. Bridges emphasized that the EM cleanup is a forty-year mission and that is on the fast track and given the budget there is not much room for progress.

The CAB believes that DOE's management of the cleanup effort has been done well and fairly timely within the regulatory standards, but there is still a lot of work left to be done.

Roundtable Discussion

Mr. Swindle asked Mr. Bridges what his perspective is on the EM response to the recommendations that the CAB has made, in terms of adequacy and understanding.

Mr. Bridges responded that he must commend Dave Moody, the Manager for SRS, for involving the board and supporting them. He stated that overall, DOE has been fairly responsive to the issues that the CAB raises, and that from a local level, he gives them high credit. He believes that EM has made a good faith effort in addressing the concerns of the CAB.

EM PROGRAM UPDATE

Dave Huizenga, Senior Advisor for Environmental Management (EM), reviewed EM's progress over Fiscal Year (FY) 2013. Mr. Huizenga began by recognizing both the Savannah River Site (SRS) for hosting the event, and Mr. Bridges for his presentation on the SRS Citizens' Advisory Board's perspective.

The major issues that Environmental Management Advisory Board (EMAB) is working on are front and center in the Department of Energy. Recently sworn in Secretary of Energy, Dr. Ernest Muniz emphasized the obligations of EM and the legacy of the Cold War. Mr. Huizenga specifically recognizes the importance of management excellence, project and contract management, and risk and risk communications in the EM program. These aspects are critical to prioritizing the schedules and scope of work in light of budget constraints, and are issues that Mr. Huizenga deals with daily. Mr. Huizenga wants to focus on reaching out to the academic and DOE community to aid in EM's science and technology effort, and to continue to find smarter ways to achieve goals.

EM has a complicated mission which will take decades to complete. Materials were created at a feverish pace during the Manhattan Project; at the time no one focused on the difficulties of cleaning up the waste in the future. It is a challenge to address extremely hazardous materials in one of kind facilities, but EM is making progress. For example, the K-25 facilities at the Oak Ridge Site (OR) were demolished, and EM continues to make steady progress at OR.

EM has used the six billion dollars received from the Recovery Act in 2009 to accelerate activities across the complex. EM has made over 11,000 shipments to the Waste Isolation Pilot Plant (WIPP) in New Mexico. EM is improving its safety record, currently working on its overall safety culture by training all senior federal employees and contractors.

The Government Accountability Office (GAO) removed most of EM's facilities from the High Risk List, which is a list of tracked projects that are at risk for exceeding cost and going off schedule. All 12 DOE and EM projects that cost less than $750 million dollars were removed from the High Risk List. This accomplishment is a testament to the efforts of federal employees and contractors. EM has four large projects remaining on the list; including the Waste Treatment Plant (WTP) Project at Hanford and the Salt Waste Treatment Processing Project (SWPF) at SRS. Due to the unique nature of these facilities, EM anticipated that these projects would remain on the list. EM will continue to dedicate effort to getting these projects removed from the list.

EM has the largest cleanup activity in the world, and is currently partnering with British, French and Russian colleagues to evaluate lessons learned, as each of these countries are currently struggling with similar cleanup issues. EM has also been consulting with Japan and the Tokyo Electric Power Company (TEPCO) concerning the Fukushima nuclear disaster.

EM has invested about $120 billion dollars into cleanup since EM's creation in 1989, with estimates between $200 and $300 billion dollars needed to complete the mission.

The FY 2014 budget request supports the work being done across the complex. Approximately, two billion of the $5.6 billion dollar request is allotted for radioactive tank waste at SRS, Hanford and the remaining tank waste at Idaho. A large fraction of this allotment will be used to deal with the highest radioactive wastes. The large construction projects, including the Waste Treatment Facility at Hanford, the SWPF at SRS, and the Idaho Sodium Bearing Waste Facility are also covered by these funds.

The FY 2014 budget request has allotted $1.1 billion dollars to Facility D&D, which includes funds to continue activities at the K-25 facilities at Oak Ridge.

The requested budget for Special Nuclear Fuels and Used Nuclear Fuel is just shy of a billion dollars, 16 percent of the request for FY 2014. There are several hundred metric tons of fuel stored, primarily at Hanford, SRS and Idaho. These requested funds will be used to safely and securely manage the nuclear materials and spent fuel. There are several tons of plutonium that were moved from Rocky Flats, Hanford and Los Alamos National Laboratory (LANL), to SRS for secure storage in the K reactor. Some of the plutonium is being taken out and processed at H Canyon. This material does not have any value, so after it is processed, it will be sent to the WIPP for storage. A portion of the material is being processed for Mixed Oxide Fuel (MOX fuel). While the disposition of this material is being completed, the security of the material needs to be maintained; this maintenance is included in the sixteen percent budget request.

The request for the transuranic (TRU) and solid waste represents 14 percent of the request for FY 2014. The WIPP repository and the disposal activity at the Nevada Nuclear Security Site (NNSA) are included in this request.

Funds for soil and groundwater make up 9 percent of the EM request. Soil and groundwater issues are extremely important; some waste has leaked from tanks, or been put into the ground and leaked into the soil and groundwater. EM is working to treat the waste and to dig it up and secure it in permanent disposal sites.

Finally, EM uses just 7 percent, or just a little less than $400 million dollars, for essential site services, which includes federal staff salaries.

The FY 2014 budget request shows how EM is prioritizing funds. The difference between the FY 2014 budget request and that of FY 2012 and FY 2013 showcases one of EM's challenges. EM receives money from Congress in three separate funds: 1) Uranium Enrichment D&D Fund (D&D Fund), 2) the Non-Defense Environmental Cleanup Fund and 3) the Defense Environmental Cleanup Fund. EM does not have the flexibility to move the money from one fund to another, without requesting a reprogramming, which allows Congress to move the money.

The D&D Fund deals with Portsmouth, Paducah and the OR Gaseous Diffusion Plant activities. This funding request was relatively stable from FY 2012 to FY 2013. This year EM received $5.29 billion due to sequestration, as opposed to the FY 2013 budget request of $5.745 billion. The lack of funds created many challenges for EM.

The request for FY 2014 is at $5.6 billion. The request for the D&D fund has increased from the $475 million requested in FY 2013 to $555 million in FY 2014. The fact that EM is transferring the Paducah GDP back into the EM portfolio accounts for the increase in this fund. About $130 or $140 million of this increase will be dedicated to the Paducah GDP. EM has been doing cleanup work at the Paducah site many for years, but has not previously dealt with D&D at the site.

Mr. Huizenga would like to receive EMAB's input on prioritization and budget challenges. EM will have to work with budget numbers around $5.6 or $5.7 billion. When EM baselined its program in 2008, it did so at a cost of $6 billion. However, instead of receiving an amount near $6 billion, EM received significantly less. It is unlikely that EM will receive the $6 billion in the near future, so EM is now focusing on working with the sites, stakeholders and regulators to rethink the path forward for sites to re-align projects and schedules.

The Non-Defense Environmental Cleanup Fund is a steady fund. It is decreasing in FY 2014 because the Stanford Linear Accelerator Center and the Brookhaven National Laboratory clean up is complete, in FY 2014, and they are being transferred back to the Office of Science.

EM is wrestling with is the Defense Environmental Cleanup budget. This money comes out of the 050 account, which is shared with the Department of Defense (DOD), therefore requiring both departments to compete for the money. The Budget Control Act of 2011 capped spending from the 050 account. Congress cannot increase this cap without passing a law to do so. Therefore, the $5 billion dollar number that EM was roughly tracking for FY 2012 and FY 2013 has been reduced by about $150 million. Even if sequestration does not occur again, EM's defense budget is constrained.

The site budgets for the Office of River Protection (ORP) and SRS are allotted at roughly $1.2 billion each. ORP at Hanford deals with the 50 million gallons of high-level liquid waste. Combined with the funds budgeted for Richland, the Hanford site has been allocated roughly $2.2 billion for tank waste and cleanup. The money allocated for Richland is being spent on the nine nuclear reactors located along the Columbia River. EM is attempting to cocoon these reactors and put them in safe storage for the next 75 years. EM is also digging up the waste near the Columbia River and moving it to the central plateau, in order to provide long-term safety for the river.

Oak Ridge, which has been allotted $413 million in the FY 2014 budget request, is working on tearing down buildings, beginning mercury cleanup in the Y-12 area, and trying to clean up a key facility in the middle of the Oak Ridge National Laboratory (ORNL) that is constraining the growth of the area.

Idaho is primarily focused on digging up and sending transuranic waste to WIPP, and is also getting ready to stabilize the remaining 900,000 gallons of liquid waste. Paducah will start surveillance and maintenance activities in addition to the groundwater and soil cleanup activities at the site. LANL is working to get the TRU waste off the mesa while facing the continual threat of wildfires.

EM is starting to decommission some of the gaseous diffusion facilities. West Valley is continuing to tear down buildings and deal with the storage of high-level waste (HLW). Nevada is the primary disposal site for low-level waste (LLW). Moab is processing the giant tailings pile at the Separations Process Research Unit (SPRU) in New York; EM is working to tear down the remaining facilities.

Mr. Huizenga stated that EM is effectively using the 5.6 billion dollars to complete work. However, EM faces high expectations at the sites regarding cleanup pace and schedules. Emerging technical challenges at some of the large facilities means that EM may need to have a transparent conversation with regulators and stakeholders about what these technical challenges will mean. Recently, the Energy Communities Alliance gave EM an A plus grade in communication; EM hopes to expand this good grade beyond communication to the actual work EM is doing.

EM is working to optimize existing waste disposal processes and systems, and to take advantage of available facilities. EM will be issuing a Greater-Than-Class-C (GTCC) Disposal Environmental Impact Statement (EIS) soon, which will addresses the potential uses for the WIPP facility to dispose of GTCC waste that has been orphaned for some time.

EM continues to focus on improving project management; the removal of most of EM's projects from the GAO High Risk List was a step in the right direction. Mr. Huizenga believes EM is struggling with the transition of sites from the historic Management & Operating contracting method, to the Federal Acquisition Regulation (FAR) based contracts. EM is still learning lessons from the transitions, and DOE employees and contractors are training in FAR- based contracts.

Mr. Huizenga believes that EM needs to spend more money on science and technology development (TD), and increase the amount of money allocated for the research and development (R&D) of methods that will optimize a flat or decreased budget, while striking an appropriate balance between current projects and investments in EM's future. A discussion of balance needs to occur between EM and regulators. OMB tracks EM's submitted budget very closely to determine that the budget will meet EM's regulatory requirements, which do not allow for much discussion of TD funding.

In FY 2012, EM allotted just $10 million for TD in the $5.7 billion budget. EM increased this amount to $20 million in FY 2013. Initially, the amount was envisioned at about $100 million, but after EM finished incorporating its existing regulatory commitments, the amount was greatly reduced. Mr. Huizenga would appreciate input

from EMAB with funding challenges. One example of an innovative method for working around budget constraints comes from the SRS. EM began working with the national laboratories on basic research concerning a solvent extraction technique. EM was then able to take the research and add its own resources to the project. The solvent extraction technology that resulted from this effort has the potential to save EM millions of dollars in future investments.

Despite the limited budget, EM is well positioned for success. EM believes it is important to work closely with regulators and stakeholders to make adjustments in the next few years to prevent a false set of expectations. One current contract issue is the Paducah facility returning to the EM portfolio. Currently there is no contract in place, but EM will seek out proposals. The addition of the Paducah facility to the EM portfolio may mean other sites may not receive as much funding as expected; funds may be taken from other sites to support the Paducah effort. Residents of the Paducah area would like to see the site decommissioned soon, rather than in 20 or 30 years; Mr. Huizenga believes that this is a realistic option. At this point, EM has not made any decisions. Unless EM invests in TD, some work at other sites will have to be stopped in order to start work on Paducah.

Roundtable Discussion

Dr. Ferrigno asked for a better understanding of the issues concerning the SWPF and the WTP, and for the reasons as to why the projects are still on the GAO High Risk List. Dr. Ferrigno asked what is currently being done to take the projects off the list, and what lessons learned have been applied to help the situation.

Mr. Huizenga responded that there are no technical issues with the SWPF. The SWPF faced challenges when one of the key vendors providing tanks and vessels could not have them delivered quickly. Mr. Huizenga is unsure whether the SWPF will be removed from the list before it is completed. The construction will be completed towards the end of 2016; EM will do its best to fund the project. There are no other issues to be rectified at this point.

At the WTP at Hanford, EM is facing a complicated waste stream. There are 5 different processing technologies that all feed into the same tanks. The waste stream is more complicated than those at SRS or West Valley, so it is taking EM longer and proving to be more difficult. Secretary Muniz is extremely focused on these issues, as was Secretary Chu. Mr. Huizenga believes that EM is making progress. There are five technical teams working on issues with mixing, erosion, corrosion and other key issues. Currently, a test plan is being developed to address these technical issues. EM is moving forward with the WTP, but it is unclear whether the project will ever be removed from the GAO High Risk list.

Mr. Paul Dabbar asked why there is such a contrast between SRS and Hanford, given the similar query content, sludge and salt issues, and the overall relatively similar technical points at both sites.

Mr. Huizenga responded that there are many similarities and differences between the two sites. Each has tanks filled with high levels of radioactive waste, but as previously mentioned, there were 5 different reprocessing technologies utilized at Hanford versus one at SRS. The tanks at SRS have different mixing capabilities and different annulus in the tank that provide for opportunities to mix tanks easier than at Hanford. The fundamental design of the WTP project at Hanford has pulse jet mixers (PJM), which is based on the Savannah River Site design, where the pulse jet mixers have been working for decades. Large plutonium particles that EM found in the waste stream created additional complications, so the PJM could not be used. Plutonium particles cannot be mixed if they are sitting at the bottom of the tank. In order to incorporate the particles the mixers must drive harder and faster, which exposes the mixers to more erosion and corrosion within the tanks. The right balance between mixing and not springing a leak must be found. EM has learned many lessons from SRS; Hanford seems to moving in a similar direction to the site. The SWPF, in a sense, is the pretreatment facility at Hanford. At SRS, EM built a full-scale operating facility. Some believe that EM should have done this at Hanford, but it wound have made the process last longer. EM may follow SRS' strategy of starting with the simpler wastes and transitioning to the more complicated wastes.

Ms. Alice Williams, Associate Principal Deputy Assistant Secretary of EM, added that there was a time throughout the whole DOE complex where mockup was out of favor. She believes that some people in EM may have been enticed by programs such as AutoCAD; new engineers were advocates using computers, while older engineers were advocates of mockup. Ms. Williams believes that EM now sees that there are many benefits to creating full-scale mockups. Ms. Williams also believes that EM could afford to be more deliberate at West Valley and SRS, whereas twenty years ago Hanford had leaking tanks, so there was a sense of urgency. In West Valley, EM ran 5 years' worth of pilot plant experience. When the new melter was put in at West Valley there were no operational issues at the plant, and it was successful.

Dr. Ferrigno noted that Ms. Williams identified two of the recommendations from the EMAB Tank Waste Recommendations: full scale mockup and realistic simulants.

Mr. Owsley stated that the state of Tennessee recognizes the difficulties that DOE, the federal government and contractors are facing, and appreciates the efforts that have been put forth. Mr. Owsley agrees that it is necessary to align priorities with budget realities, and to begin to focus TD in areas that will achieve savings and allow for additional or accelerated cleanup in the future. Mr. Owsley realizes that this focus will cause DOE to renegotiate compliance agreements, and he suggests doing so in an open and transparent manner. Mr. Owsley then asked where EM will test key planning facilities for EM management as part of end-state initiatives.

Mr. Huizenga responded that he would get back to Mr. Owsley with a response regarding the planning facilities.

Mr. Dave Swindle asked Mr. Huizenga how with the budget decrease from about $6 billion per year to $5.6-$5.7 billion, and with the addition of the Paducah site to the EM portfolio, how this addition would affect the overall value of the EM baseline going forward.

Mr. Huizenga responded that the addition of Paducah resulted in EM adding about $130 million to the EM cleanup budget baseline, based on the assumption that EM will take over the site in mid-2014. The $130 million is the projected amount needed to take over the Paducah facility and conduct surveillance and maintenance activities.

EM is currently wrestling with the decreased budget of $5.6 billion. EM recently created a tool that was rolled out at the stakeholders' meeting in New Orleans. The tool allows users to see what scenarios would result if money was moved from one site to another. EM has decreased funding by small amounts at most sites. Another approach would be to make a more drastic cut at one specific site, and stop a certain project until funding becomes available. If this latter option is chosen, the reasons behind the cut would be communicated to the regulators.

Mr. Swindle stated that at Paducah, the uranium enrichment account always had a fee associated with it. These fees generated a fund that was to be used to decontaminate and decommission the nuclear facility. Mr. Swindle stated that he is perplexed as to why the well-resourced fund cannot accelerate some of the D&D at Paducah.

Mr. Huizenga responded that there is about $4 billion dollars in the account, and more than $4 billion dollars worth of work to do. EM has tried to reauthorize the fund, but has faced challenges. It is not likely that Congress will add money to the fund either, so once the $4 billion is used, Mr. Huizenga presumes a straight appropriations process will follow.

Mr. Ferrigno asked how the lessons learned and the technology used today will impact what will be done differently at Paducah during deactivation.

Mr. Huizenga responded that Ms. Williams and her team have been studying this issue. Ms. Williams agreed that there is a lot to be learned from activities at both OR and Portsmouth.

Ms. Williams acknowledged that it is not a reality for EM to move directly into D&D at Paducah. EM had an external technical review at Paducah; the reviewers went through a clean slate process and identified things that EM could do differently that would produce upfront savings and pay big dividends in the future. Ms. Williams is unsure how much of these identified processes EM will be able to execute, but she thinks that a lively discussion with EMAB could benefit DOE.

Ms. Lessie Price asked how EM is ensuring Congress is aware of the needs of the EM program, and what sorts of frequent communication takes place between EM and the congressional representatives to inform them of the sites' needs. Ms. Price stated that

Congress funds what it believes is important and if people are not fully informed about needs it may lessen their effort. She knows that each site feels that their work is a priority, and as a result of this each site works directly with stakeholders and congressional representatives.

Mr. Huizenga stated that budget hearings for himself and Secretary Muniz are underway, so that is one formal process. Prior to the hearings, EM explains its activities to the congressional representatives and staff. Mr. Huizenga assured Ms. Price that during his recent hearings he emphasized that EM will be making less Defense Waste Processing Facility canisters at SRS due to the reduced budget. Mr. Huizenga knows EM supports the president's budget, and realizes that there is only so much money the president is able to maneuver. Constituents have the right and ability to make their views known to Congress, and Mr. Huizenga encourages them to do so.

Ms. Jane Hedges asked about the 5-year projection that shows a flat budget. She understands that this is most likely directed from the administration, but thinks that it may give Congress the idea that the budget request is sufficient. Also, Ms. Hedges asked how the delegation can build the constituency beyond the sites to help the all of Congress understand the sites' needs. In regards to where EM funding is going, Ms. Hedges is concerned that there is an underlining assumption that risk-based planning and cleanup is always cheaper and faster, when in reality the opposite may be true in some cases.

Mr. Huizenga responded that like most things in EM, nothing is completely straightforward. He agrees with Ms. Hedges that EM is in line with spending on the higher risk issues, but Mr. Huizenga does wonder whether the funding would be different if a risk-based approach was taken on all projects. Mr. Huizenga gave the example of observing EM contractors tearing down old pump facilities in the Columbia River at the Hanford site. In some instances, those old pump facilities would have been able to sit there for a decade or so without causing harm because there is no real radioactivity associated with them. The decision to remove the pipes was probably made when EM thought there was enough money to complete the work along with other activities. The action was only pursued because it was in the contractors' contract.

At SRS, EM has wrestled with how much money should be put into salt waste processing in order to get it done as quickly. This is a question of not only funds, but also who is hired to do the work. EM could double the budget to get many welders into a room as quickly as possible, but if EM cannot do this safely, than it would be wasteful to allocate for that number of welders. EM needs to strike the right balance between resources and safety. In Tennessee, workers have gotten the method of tearing the K-25 building down to a science; they will then use this method to take down K-27. The argument against this is that K-27 is not causing any high-risk issues. But, there is a $2 billion contract in place, and if this is not acted upon now, the entire workforce would be demobilized or sent away for an unknown period of unknown time. EM's dilemma is that the likelihood of bringing back the same workers to do the work as efficiently is unlikely. Overall, EM is working as fast as it can on the most highly radioactive waste while tearing down and deactivating huge structures. It may be helpful to examine what things should be

postponed from a risk-based approach and whether this could save EM millions of dollars in the process, but Mr. Huizenga suspects the monetary savings may not be that great.

Mr. Brian Estes commented that by the rules, the WTP and SWPF will never come off the GAO High Risk list, because both projects have already failed. But, Mr. Estes believes that getting the projects that cost less than $750 million off the list shows great progress. Mr. Estes observed that each of these projects is a first of a kind, and that once the industrial process is established for each of these projects, a clearer estimate for a schedule may be made, along with a predicting of what issues may occur. Mr. Estes believes that based on the most recent GAO High Risk List, the GAO seems to have confidence in the EM program. Mr. Estes observed that in the budget there is only an overhead of 7 percent with the rest of the funding going to projects, which he views as a pretty good use of funds.

Mr. Huizenga asked the group about an appropriate way to address the regulators on the issue of transparency. Both Portsmouth and West Valley are concerned about cuts in the FY 2013 budget. Mr. Huizenga responded by stating that the way EM structures the budget is by trying to meet all of the compliance agreements. In both Portsmouth and West Valley, there were no regulatory drivers. Mr. Huizenga acknowledges that if some sites want to take a backseat to the sites where there is more risk; those regulators will have to explain that to their constituencies. Mr. Huizenga acknowledges that though it is the right thing to do, it may be difficult to convince the community.

Dr. Ferrigno responded that sometimes when looking forward, one must look back. He noted two instances where site agreements were made before the final agreements were actually made. At the Fernald site, DOE, the stakeholders, regulators, EPA and others worked collectively to make work progress quickly. Dr. Ferrigno views Mr. Huizenga's question a way to figure out how EM can help the national program collectively and not just the individual stakeholders of a site. This could impact technical issues as well as physical issues, such as jobs, which will always be a topic of discussion in the program.

Mr. Owsley stated that the state of Tennessee recognizes the realities of the budget, and notes there is an opportunity for EM to work with regulators in an open and transparent manner. He states that if regulators see one site being successful with compliance and enforcement, it may encourage others to seek the same. If regulators see opportunities for future cleanup as a result of changes in compliance agreements, EM may be able to achieve a greater ability to negotiate. The Rocky Flats site was a success because regulators were willing to extend schedules to achieve the site closure. This came with the promise that additional funding from the savings would be made available in the future. Mr. Owsley understands the difficulties that this strategy creates, but believes that future promises can create additional opportunities.

Mr. Owsley noted that there are opportunities to change the totals in the budget divisions. Tennessee would like to see a more balanced budget between D&D and soil and groundwater, along with a compliance schedule that reflects this. Mr. Owsley noted that

if EM establishes communication with the regulators, EM may be able to achieve more in those states that have the greatest need for cleanup.

Mr. Huizenga responded by using LANL as an example. The state of New Mexico has given a pass to DOE temporarily for what is officially in the consent decree because the state prioritized getting the TRU waste off the mesa. EM is working on a reprogramming to accomplish this.

Mr. Huizenga believes that adjustments made to compliance agreements should be made in a manner in which regulators and EM agree on what priorities can slide to the right in order to free funding for more pressing matters. This process can help accomplish the goals of both EM and the stakeholders.

Mr. Dabbar commented that from a regulatory view in the private sector, it is better to have a somewhat flexible environment because of the constant changing environment. He believes that the regulatory environment is similar to EM, where there are also budgetary and technical challenges. Mr. Dabbar stated that he feels that the consent decree requirements are more rigid at Hanford than at SRS. Mr. Dabbar was surprised that the regulatory situation of the tank cleanup at SRS seemed collaborative between the regulators and EM. Though the ultimate endpoint seemed the same from a contamination and oversight point of view, SRS seems easier to deal with than Hanford.

Mr. Huizenga responded that it goes back to the idea that EM is able to do things at SRS that they cannot do at Hanford. The complexity of the waste stream, the different philosophy and the different design caused long term delays at Hanford. Although, Mr. Huizenga was not there when the state of Washington and DOE negotiated the consent decree, he can imagine that it was negotiated at a time when Hanford was frustrated with EM. The consent decree provides additional constraints. Relative to the tank issue itself, there are different regulatory structures in place at SRS. EM has proven that they can close tanks with the SRS process, so perhaps Hanford can use a similar process in the future.

Dr. Ferrigno responded the Tank Waste Subcommittee (TWS) found that SRS was operating and Hanford was building. At SRS, workers were building and making a product, which has a lot more credibility of predicting the future, whereas at Hanford when, facilities were being built with the intention of operating. Dr. Ferrigno stated that this is not taking away the credibility from either party, but that operations carries more inherent stakeholder trust.

Mr. Frank Coffman commented about the R&D program. Mr. Coffman gave an example of what has historically been done with the SC Office. If SC built an accelerator project and the injector did not work, there was a ten to twenty percent R&D budget to help figure out an answer. Mr. Coffman emphasized that the science projects are notorious for being able to fix problems analogous to the stirring and corrosion problems at WTP. But at EM, there is $20 million out of a $6 billion budget, or three tenths of one percent, for R&D to improve the environmental situations. The Science and Technology

Subcommittee will be looking at the R&D fund, and how to redirect money if necessary and enhance and fix environmental solutions and projects that EM is trying to implement. The Science and Technology Subcommittee will have recommendations for EM for the next EMAB meeting.

Mr. Huizenga stated that he appreciates and looks forward to those recommendations. He thinks that EM and the Science and Technology Subcommittee are moving in the same direction.

TANK WASTE STRATEGY UPDATE

Mr. Ken Picha, Deputy Assistant Secretary for Tank Waste and Nuclear Materials, shared an update on EM's Tank Waste Program, which represents the largest portion of the EM budget. The program is slated to be complete in 35 years, but this will be a technical challenge. These challenges include the Waste Treatment and Immobilization Plant at Hanford, which was designed with a forty-year life span.

Some of the issues that EMAB's Tank Waste Subcommittee initially looked at in 2010 are still unresolved. EM is trying to accelerate the treatment and processing schedules at both the INL and SRS. At Idaho, where EM has about 900,000 gallons of liquid waste, EM is working hard to begin operations of a treatment facility in early 2014.

EM wants to minimize additional facilities, when possible. Some technical issues at Hanford may require additional facilities, but these will be small facilities. However, the price of a facility is high because the facility will be a Hazard Category Two. EM is always striving for more efficient ways of treating and processing waste. There are examples of this at SRS. At the SWPF, EM is already looking at 2 new chemical changes that would improve the throughput once that facility starts running. For the low level activity waste, at SRS, where the Saltstone Disposal Facility has been operating since the late 1980s, there is a disposition path.

One of EM's current challenges is ensuring sufficient resources to support the technical activities at the national laboratories. The Pacific Northwest National Laboratory (PNNL) and other smaller laboratories also help EM support Hanford and other sites.

There has been a lot of activity since EMAB's TWS did their first review for the WTP. Many construction project reviews have taken place since the first one at the WTP in August 2009. EM also had a number of reviews at the Salt Waste Processing Facility in SRS, the most recent completed in June 2013. Other reviews include external groups for specific activities of the EM tank waste program. EM is currently working on addressing issues brought up during these reviews.

A message from EMAB's first tank waste report is the need for a strong DOE owner with a single point of oversight under a unified baseline. EM has taken some action in this area. Mr. Huizenga has worked to build a good team to handle the Hanford Tank Waste Program. There is a new manager at the ORP, Mr, Kevin Smith, a former site manager at

LANL. EM also brought on a new federal project manager, Mr. Bill Hamel, who previously worked with Ms. Williams when she was the West Valley site manager. Mr. Hamel has extensive experience in starting up, commissioning and operating the vitrification facility at West Valley, and also worked as the WTP Engineering Director. At HQ, EM has created a single point of contact for the Hanford Tank Waste Program with Todd Shrader, the director for the Office of the Waste Treatment Program/Tank Farm Program. EM HQ strives to be mindful that WTP is part of an integrated system.

The second report from EMAB's TWS was a follow-up to the WTP report, to examine systematic tank waste issues.

In November 2011, Mr. Huizenga gave a summary response to the recommendations, and in June 2013 EM was able to deliver a response to the overall recommendations.

The TWS's first overarching recommendation is for DOE to seek multi-year appropriations with no control points for mission critical points at SRS and Hanford. Although this is something that EM would like to do, EM is not capable of obtaining multi-year funding unilaterally, however. EM has tried to seek flexibility whenever possible. For example in FY 2012, there were 2 control points for WTP, and in previous years there have been 5 control points, one for each of the main facilities that comprise the WTP. EM is trying to push to obtain a single control point for WTP to give EM greater flexibility and allow EM to move funds around as projects dictate.

The TWS's second recommendation is that DOE seek to standardize life-cycle cost evaluations, system-wide, when evaluating alternatives for technology. One thing that EM has done since the reorganization is to establish the Tank Waste Corporate Board (Corporate Board), which is a group comprised of both HQ managers and field managers that have management responsibilities for tank waste activities. The Corporate Board held their first meeting last year. The Corporate Board's purview will be to make recommendations and examine different approaches in order to standardize and improve processes for EM.

The Corporate Board's next meeting will be in Richland, Washington in October 2013. This is an opportunity for DOE and prime contractor representatives to address technical and programmatic issues. There is also a review of reviews, which gets to the heart of how EM is trying to address all the external recommendations and advice that EM has received.

The TWS's third general recommendation, which is somewhat overtaken by events, dealt with DOE designing a funding request for the execution of Vision 2020 within the Hanford Tank Waste Program, to allow a single low-activity waste melter to operate earlier than in the baseline. EM is preparing a business case, which looks at several alternatives: early startup of a low-level activity facility, startup of one melter, which is (the configuration that the TWS focused on), and startup on 2 melters. These options are currently under review.

The overarching fourth recommendation from the TWS is that SRS and ORP be extremely vigilant in applying resources to additional project developments to the detriment of some of EM's key facilities, such as SWPF and WTP. EM must always be flexible and have alternatives if projects do not come to fruition or the time frame is different than originally thought. EM is continuing to support those projects to the extent that EM thinks is appropriate.

Different aspects of EM's tank waste program have been revised, many during the period of 2009-2011. There have also been impacts on the budget and management changes, as well as both complimentary and conflicting reviews. In response to the influx of reviews, EM is trying to put together a process to examine all the various advice and recommendations EM has received, and to approach them in a systematic way. A process has been developed, and the recommendations have been loaded onto a database, where EM is currently identifying leads and initial responses. Once this process is complete, EM will send TWS a brief on how EM looked at the various recommendations. There is also a sub-group of the Corporate Board that is tracking the status of the recommendations, and keeping the information as current as possible.

EM has closed approximately 10 percent of the recommendations. About 15 to 20 percent of these recommendations are subject to funding, another 25 percent are in progress and for the remaining 50 percent, EM is reevaluating its tank waste strategy.

The recent review activity has focused on Hanford's tank waste issues. The IG, GAO, and DNFSB have reviewed, as part of DOE projects, many addressing the WTP, including some differing professional opinions on the processes at WTP. There were also a number of reviews related to safety culture, as far back as late 2010.

One activity that probably changed some of the dynamics of reviews occurred when previous Secretary Chu went to WTP to discuss safety culture with contractors and DOE employees. Secretary Chu wanted everyone from senior managers to field managers to encourage safety issues. While at WTP, Secretary Chu was shown some of the testing facilities supporting WTP, including large scale mixing integrated tests. After seeing the tests, the Secretary had more questions and wanted to have trusted experts look at specific processes at WTP. As part of that questioning, EM began to explore what kind of in-service inspection and design redundancy EM could build within the facilities. EM also began looking more closely at the pulse jet mixing vessels. EM wanted to be able to ensure it could identify if there was a potential leak in the cell of one of the vessels or whether the piping had an issue. EM has additional questions about black cell and vessel analysis and the structural aspects of the pulse jet vessels, so EM is continuing to look at these and other safety issues. EM is also looking at ways to regulate a facility with minimal human access. EM wants to ensure that the piping and the components are robust enough to handle any erosion or corrosion.

EM has embarked on a process of large-scale testing. EM was planning to use large-scale testing to identify the models and then use the models to validate with large-scale vessels; however, EM abandoned that approach and now is doing full-scale vessel testing.

The first one will be a vessel in an HLW facility. EM is currently building a facility that will hopefully become a part of the full-scale integrated testing program and be operational later this summer. Mr. Picha thinks that this will be a key component in reducing technical uncertainty concerning the operation of the PJM vessels.

Mr. Picha believes that EM has developed a rigorous process for capturing the recommendations that are coming from the external groups, including the TWS. Though EM is not as advanced in this process as they would like to be, progress for tracking recommendations has improved with the new tool.

Roundtable

Ms. Jennifer Salisbury asked Mr. Picha about the conflicting recommendations that EM has received. She asked for examples and for information on what was being done to resolve these conflicts. Mr. Picha stated that he would get back to Ms. Salisbury on that issue.

Mr. Swindle stated that one of the lessons learned and key points from the recent contracting and project management workshops led by Jack Surash, Deputy Assistant Secretary of Acquisition and Project Management, is that there is an institutional knowledge gap in new facility commissioning, and that despite the many years of startups, reports of lessons learned have not been assembled. Mr. Swindle is interested in EM's planning and effort, given the technology challenges that have persisted throughout all of the efforts with the WTP.

Mr. Picha responded that the Corporate Board has recognized this exact issue, and that EM is preparing a document of good and bad experience. Mr. Picha stated that there is a commissioning subgroup that is performing this activity. EM is in the process of interviewing individuals involved at different EM facility startups and having them share their experiences. Mr. Picha cited his experience at West Valley, and that each individual subgroup is working on pulling the information together to share with the broader EM organization.

Dr. Ferrigno responded that one of the recommendations that the TWS made was for DOE to find a way to augment their profile of private sector resources to include chemical companies and petrochemical organizations, as WTP has every chemical on the periodic table and chemical organizations have extensive experience. Dr. Ferrigno stated that one of the practices in the chemical, petrochemical, petroleum and industrial industries, is for the operator to do combined hazardous operations review (HAZ-OPS) with the operator regulator, the designer and the constructor. It is an integrated review that is systematic. DOE utilizes many similar reviews, but not all of these elements may be as thoroughly documented as the HAZ-OP review process (this was a recommendation in the Tank Waste Subcommittee Report). Though this is not one of the recommendations that EM has addressed yet, Dr. Ferrigno emphasized that this recommendation is timely given that EM is now at the juncture of EM's design for WTP and other pretreatment technology reviews. Dr. Ferrigno stated that it may benefit DOE

to invest approximately four weeks and bring a consortium together to review the details on compliance, design and operations and commissioning. He believes that this process will be beneficial.

Mr. Picha responded that he remembered that the TWS was very insistent on this recommendation and that EM did do something similar concerning cold chemical runs at the Defense Waste Processing Facility.

Mr. Coffman asked whether EM has had any recent success concerning mixing R&D studies with science technology reviews and externalizing the project costs, so that EM does not receive GAO-type criticism about the projects. He also asked whether there has been any success in moving designation dollars around.

Mr. Picha reported that EM is trying to ensure that technologies are mature before selecting them. The Office of Tank Waste and Nuclear Material currently does a technology readiness process (TRA) to determine this. EM did one on WTP. EM is currently looking at alternative technologies, including the small column ion exchange treatment. EM did a TRA of this process, which results in the technology maturation plan. If technologies are not at a certain TRA level, such as a 6 or 7, EM will then develop a technology maturation plan. EM has made sure to emphasize the importance of the TRA. Mr. Picha recalls that EM did not do a formal TRA process for the SWPF, but EM did follow a rigorous technology development down-select process selecting the preferred technology. From this process, EM developed the Actinide Removal Process (ARP)/Modular Caustic Side Solvent Extraction Unit (MCU) facility, a prototype for SWPF that has been operating for the last 5 years. The facility has helped to identify issues that can be applied to the SWPF and to Parsons, the engineering design contractor.

Mr. Coffman responded that the concern is that sometimes DOE is its own worst enemy, and that the method in which that project management funds are counted determines whether a project is on budget or not. Mr. Coffman stated that if money is allocated to improve the SWTF by developing a new stripper system or organic system, it could be classified as either an R&D project or could be a project overrun, and that by adding improvement to the system, the years that a project is run and the actual costs will be reduced.

Ms. Patricia Suggs, manager of the DOE Savannah River Operations Office, Salt Processing Division, inserted that the next generation solvent is being considered for SWPF and that it will be funded from the TD funds. Parsons has also done some testing with the next generation solvent in their facility, and although this is part of their contract, it is not part of the project.

Mr. Picha added that some of the testing that EM has done on WTP has been done with project money.

Dr. Ferrigno added that he thanks EM for not making a lot of excuses because of sequestration.

Mr. Huizenga thanked EMAB members for attending the meeting. He appreciates EMAB's input and looks forward to working with EMAB in the upcoming months.

UPDATES ON EMAB FY 2012 WORK PLAN ASSIGNMENTS

Ms. Williams stated that EM owes Mr. Huizenga a great debt for advocating for TD funds. Ms. Williams stated that TD funds are currently low, but there is a long-term vision in which the funds will grow to a point where they are sustainable.

TD is complicated, because it can be emotional. The American psyche does not do well with delayed gratification. Examples of this include the next generation solvent. EM looks at this as a TD and R&D story. This project started many years ago with basic science from the Science Office. This project developed slowly and now EM is at the point of receiving the benefits of that work. Also, with EM's small budget, if EM goes out with a plan to invest in something with great payback, there will be major setbacks with Congress, OMB and other stakeholders.

Every site office has a strategic plan and is looking at the future; a site office by its very nature is tactical. A good example of this is the large sinkhole that SRS was dealing with earlier this year. If it came down to funding TD or fixing the sinkhole, the sinkhole would be chosen. Similar situations are occurring across the complex. An enforceable milestone will trump advocacy for TD.

Ms. Williams supports open and honest communication and the type of intellectual decision-making that allows EM to make the best decisions, but there are times when EM needs to discipline itself, so that things are not said in the heat of the moment that actually undercut what EM is trying to accomplish.

EM has worked with both the Savannah River National Laboratory (SRNL) and PNNL to discuss a path forward for the labs collaborating to assist EM. There are some things that PNNL as a science laboratory can do very well and there are some things that SRNL as an applied engineering laboratory can do very well. The combination of the two labs has been very effective so far.

ORP has major challenges where technology advancement can make a large difference. The collaboration between the labs will also include input from NNSA, science laboratories and EM. This partnership is still in the formative stages. EM has also been working with NE and NNSA on a coordinated DOE-wide approach for nuclear separations. It will take some time before results are seen.

Ms. Williams pointed out that in EM, there is no "office of TD;" the responsibility has been spread across all three EM Mission Units. A TD office would be too small to be stand alone, so to aid the Mission Units the Technology Development Governance Board was instituted. This includes the three Mission Units, two representatives from the field

and one from the budget office. The council is where EM makes TD decisions. The council also follows how EM is proceeding with the portfolio. Ms. Williams reports that it the council is working well thus far.

EM knows that mercury will be the next difficult challenge. The Y-12 will have to take down buildings if it is going to continue to be a viable and robust part of NNSA. When EM starts taking down those buildings, it will need to be done correctly to avoid mercury problems. EM will need to use a systems-based approach. There is not enough funding for the Y-12 buildings and EM HQ is working closely with ORNL. Ms. Williams believes that EM is still several years behind on this project.

Ms. Williams stated that EM has most likely oversold TD as a way of saving dollars; it is not necessarily a savings of dollars, but rather a method of doing work correctly the first time. Ms. Williams thinks that EM needs to work on its messaging points.

The deep vadose zone at Hanford was one of the things that Secretary Muniz was involved in prior to becoming Secretary. Since he has become Secretary, it is clear that he has not forgotten about this project. When Secretary Muniz is out at Hanford, Ms. Williams imagines that he will discuss groundwater. There were some good starts, especially in the late 1990s and early 2000s, but as of late EM has not been working on this project as much.

The Advanced Simulation Capability for Environmental Management (ASCEM) is a software project that aims at developing next-generation, science-based reactive flow and transport simulation capabilities, and supports modeling toolsets within a high-performance computing framework to address DOE/EM's waste storage and environmental cleanup challenges. When the decision was made that EM would no longer pursue underground nuclear weapons testing, the stockpile stewardship program was developed. From this program, DOE figured out a way to get the information without underground testing. A lot of this focused program on modeling techniques, and eventually became the advanced simulation capability initiative at NNSA. EM may not be interested in the fact that NNSA has cracked the code of equations on states of plutonium, but EM does care that there is an infrastructure that is out there with that advanced computing capability that applies to EM work. This kind of modeling capability in ASCEM will allow EM to address issues such as the groundwater barrier walls that the United States Geological Survey (USGS) were concerned with, specifically at LANL, with the chromium plume that is being moved off-site.

EM has not stated that ASCEM will save the organization money. However, ASCEM will allow EM to make the informed decisions needed to address long-term issues. This is a subtle difference, but it is an important and difficult topic to discuss with Congress. Congress wants to know how much ASCEM can save EM in terms of cost, and EM will have to respond that that is unclear, but that it will allow EM to get the process right the first time, and save money in the future.

EM has relied heavily on the national laboratories to come up with an in situ decommissioning approach. This approach involved performance assessment work, modeling, grout development and a very methodical structure to determine when decommissioning is acceptable to regulators and robust enough for the long term. This is a very structured approach that has many nodules to be addressed. EM has more work to do, and has had success at the Pittsburgh Naval Reactors (PNR), but this process needs to be developed further before it is applied complex-wide.

EM does a lot of work with Historically Black Colleges and Universities (HBCUs) and Universities. Dr. Karen Skubal of EM is leading this effort and providing mentorship to students. NNSA and the SC are also involved in this program. For years the Interstate Technology and Regulatory Council has worked effectively and quietly with industry and stakeholders to determine how to best educate students, and us this strategy with the federal government, state governments, federal regulators and stakeholders. EM's budget for this program is about $300,000 dollars; much has been accomplished with this low level of funding.

The Consortium for Risk Evaluation with Stakeholder Participation (CRESP) is an organization that EM has partnered with over the years, through dialogue and listening to the concerns of stakeholders, regulators, and communities, to come up with solutions. It takes good science, follow-up, follow-through, good listening skills, and a mutual respect for the perspective of people. EM will continue to use CRESP on future projects, and EM is very grateful that CRESP has continued to partner with EM, even with a decreased budget.

In FY 2013, EM was grateful to receive $10 million. In FY 2014, EM is requesting $29 million. EM views this as a 50% increase. Ms. Williams stressed that EM acknowledges life cycle savings, but the point of TD is to do the right thing the first time, in a manner that is deliberative and based on good science.

Roundtable Discussion

Ms. Hedges asked whether EM had looked into any partnerships with other agencies.

Ms. Williams stated that EM has worked with a federal facilities group which includes the Environmental Protection Agency (EPA), DOD and DOE. This is a longstanding relationship, and the agencies get together several times a year to discuss issues. EM admires many things DOD has been able to accomplish, and EPA is a very good partner. EM also has a relationship with the United States Nuclear Regulatory Commission (NRC), under the Section 3116 process of the Ronald W. Reagan National Defense Authorization Act, the linkage within NRC and DOE/EM has become stronger over the last couple of years. NRC has a different approach than EM, but EM has done a good job at working together.

Mr. Swindle asked about the evolution of technology, and stated that historically one of the challenges of the TD community has been solving problems that were not necessarily a priority, but interesting science.

Ms. Williams responded that the TD Governance Board involves prioritizing technology solutions. EM has very little money going to D&D, so one of the low level things that EM is trying to do is to capture the knowledge that other entities have on D&D, so that when the money is available, EM can build on that work and technology. EM could do better on coupling the user and the priorities.

Mr. Swindle observed that over the last several months the US Army Corps of Engineers (USACE) has put forth a good amount of money into water management resource centers and that EM may benefit from some insight on some the effective models that have been built. Mr. Swindle knows that DOE has partnered with the Corps in the past on project management.

Ms. Williams requested the names of the projects, so that EM can follow up on this work. EM's TD's budget has plummeted so low that the organization encourages this type of partnering.

Mr. Swindle responded that one of the issues that EMAB's Acquisition and Project Management Subcommittee has observed is that for many projects on the GAO High Risk List the baseline was locked before technology issues were addressed, Hanford being the classic example. Mr. Swindle suggests that the incorporation of technology development requirements should be included in the early project planning. Ms. Williams agrees with this observation.

Ms. Salisbury asked about lessons learned and how EM plans to institutionalize this, especially now with an aging workforce.

Ms. Williams responded that EM has a small activity in knowledge management, and that the plan is to do so, but it is in its infancy. Currently, EM relies on individuals' personal knowledge and their tangible files, but there is just too much information to maintain this way. EM is working on creating a system for all this information and for the lessons learned. EM is doing a good job with D&D topics, but other areas still need a lot of work.

Mr. Owsley encourages EM to interact with regulators early on with any TD that will impact a scope or compliance agreement in order to assure that the TD effort is well-received and utilized. EM may not be able to utilize the TD that they have worked on if regulators put up a roadblock; the regulators certainly want to be part of the solution.

Ms. Williams added that EM must realize that if it wishes to insert technology into a compliance agreement, that EM is asking the regulators to take a big risk. Mr. Owsley would advocate that regulators would be willing to do so, if they could see the benefit. Mr. Owsley also commented that ASCEM would be useful to the OR site. There are a

number of technically difficult problems and he believes it would have some direct application on identifying paths forward. He then asked about the topic of in situ decommissioning, and whether there was any consideration regarding the reuse or the lack of reuse of the property when EM decides to close a facility in place.

Ms. Williams responded that there is consideration, and EM is very excited for where in situ decommissioning will take the organization. Advocates of the Manhattan Project National Park are not excited about this prospect. There are places where in situ decommissioning makes sense and other areas where it does not. In situ decommissioning at sites that have either a long operating mission or a long EM mission are probably good candidates for in situ decommissioning, whereas states that have a strong component focus on community use are probably not. EM has been looking at lessons learned on in situ D&D at Sellafield.

SUBCOMMITTEE UPDATES

SCIENCE AND TECHNOLOGY SUBCOMMITTEE

The Science and Technology Subcommittee include co-chairs Dr. Coffman and Dr. Kearfott, Dr. Dennis Ferrigno, Mr. John Owsley and Dr. Larry Papay.

Technology development (TD), not only provides improved environmental solutions, it also creates fixes for unexpected problems. EM's $20 million budget for the technology development program is $3/10^{th}$ of a percent of the overall program budget. The subcommittee believes that increasing that number would allow EM the ability to accommodate unanticipated and critical major project difficulties, and allow the minimization of a lot of adverse costs and minimize the associated GAO and stakeholders' criticism.

The subcommittee believes that documenting experiences and lessons learned from industry involvement in technical approaches, regulatory innovation, and any R & D would provide prospective to the TD program. In all the reports that EM provided to the subcommittee, industry was not mentioned. Mr. Coffman believes that there are industry projects of similar complexities and magnitude which could aid EM.

Dr. Ferrigno added that in private sector there is typically a gated process that could be as much as a five-step process for critical decision-making and it is easier to make investment decisions earlier in the project than later. The private sector also typically looks not just at risk, but also, optimization. This typically matures a project much quicker and in doing so, there is a higher opportunity of saving dividends and mitigating risks.

RISK COMMUNICATIONS SUBCOMMITTEE

At the December 2012 meeting, EMAB was asked to review EM's Strategic Planning Communication Tool. The members of the already formed Risk Subcommittee and Ms.

Lessie Price formed a separate subcommittee, the Risk Communications Subcommittee, to complete this task.

Following the December meeting, Jane Hedges, John Owsley, Willie Preacher, and Robert Thompson attended EM's Intergovernmental Meeting where the tool was demonstrated. The four members polled their respective intergovernmental entities to get a broader opinion of the demonstration and to collect feedback.

Ms. Hedges stated that the demonstration was well-planned and that there was staff to help negotiate people through the tool the first time. The subcommittee thought it was the tool itself was clear with great graphics. They also thought that the commands for negotiating through the tool were understandable and that a person could use the tool independently with minimal assistance. The user is provided with all the sites in the EM portfolio, along with costs for cleanup and elements within that cleanup. The tool allows a user to manipulate how money is invested into the sites. For example, if a user wanted to put all the money that EM had into Hanford, the tool would show what that would mean to the other sites in terms of length of time and the cost of the cleanup.

Ms. Hedges stated that those that reviewed the tool have a high knowledge level of the sites across the complex, and that one of the things that stemmed from this demonstration was the question of who is the intended user of the tool. Ms. Hedges stated that if it was intended for the broader public and for outreach then the tool certainly accomplished that, but for those who are more intimately involved with the sites, the choices provided in the tool were somewhat simplistic. For example, if a user delayed cleanup in the central part of Hanford, the tool was very efficient telling the user the milestones that would be missed and the increased costs, but the tool is unable to calculate what the chances for the increased contamination of groundwater would be. It also did not take credit for removing contamination from the environment, unless there was a big cost associated, so if contamination problems were resolved by institutionalized standards, such as creating a rule forbidding people from drinking the groundwater, the tool would not consider it a cost.

Ms. Hedges stated that it could be a very useful tool for the public and stakeholders to help them understand trade-offs and the decision-making process, and that she appreciated the opportunity to review the tool.

Ms. Williams added that after the demonstration of the Strategic Planning Tool, there were upgrades made to the tool. Ms. Williams then thanked the committee on their thoughtful feedback and observations.

Ms. Hedges responded that the subcommittee thought it would be a great tool for the Congressional staff to have and that it would demonstrate the trade-offs that EM has to make.

Ms. Hedges added that the subcommittee attended a webinar, where Pacific Northwest National Laboratory (PNNL) demonstrated the PHOENIX system for the Hanford site.

All of the data in the system will soon be available for use for regulators, stakeholders, tribes, and the public. Tribes and stakeholders seem to be very impressed. Ms. Hedges and the subcommittee were impressed and she encourages DOE to look at extending this tool to other sites. She stated that she is unsure of the cost of the project and that may have some bearing on the ability to extend it.

ACQUISITION AND PROJECT MANAGEMENT SUBCOMMITTEE

The Acquisition and Project Management Subcommittee (APMS) is comprised of Co-Chair Mr. Brian Estes, Co-Chair Mr. David Swindle, Dr. Larry Papay, Ms. Jennifer Salisbury, and Ms. Angela Watmore, who participates only in a subcommittee capacity.

For FY 2013, the APMS had a plan to review a number of operational policies and protocols at the request of EM-1. APMS has tracked closely the external assessments by the GAO, as part of APMS' overall charges, to track the issue of GAO's High Risk List and to track EM's project while they are still on the list.

EM's project management continues to receive attention from the GAO. Thus far in 2013, GAO has produced five reports examining the effectiveness of EM's project management. GAO-13-23 looked at the effectiveness of the Recovery Act cleanup projects. 78 out of the 112 Recovery Act projects were completed on time at or around budget, which is a testament to DOE. Mr. Swindle encourages members to scan this report.

GAO-13-129 looked at the issue of how non-major projects were fulfilling objectives in terms of cost schedules. One of the findings, which has a cross reference to some of the other committee findings on workforce and work skills and the inadequacy of in particular some number of critical occupations and the shortfalls to meet future requirements of EM. This is something that the EMAB has looked at across the board.

GAO-13-283 was the High Risk List report that Mr. Huizenga cited earlier. Based on this report, EM continues to stand out prominently in project management and the report recognizes the great strides that EM has made. GAO will continue to monitor those non-major projects to ensure that progress is in those areas.

A number of testimonies and reports were produced by GAO for costs on projects over $750 million. A new study that looks at the highlights of how EM has performed in major projects over $750 million is forthcoming, and APMS will be tracking this closely.

On June 4-5, 2013, Jack Surash, DAS for Acquisition and Project Management, and his team conducted their annual workshop for federal and contract managers on EM. EMAB staff members attended. Some of the recognized issues at that workshop were first pointed out by APMS.

Mr. Estes summarized APMS' observations. GAO is beginning to recognize the progress that EM has made in project management and that this encouragement is helpful as EM works on its cultural change process, while still nothing caveats.

APMS also reviewed the Operations Policy and Protocol, but will that APMS looked at will require some clarification, such as how to establish the performance baselines in order to consistently assess performance. This was mentioned in the GAO-13-23 report. GAO acknowledges that progress is being made, but wants refinement.

The draft policy for the Federal Project Director certifications for EM Capital Management/Capital Assets Projects and EM's guidance for change control are not yet ready for APMS review.

APMS is encouraged that, despite the challenges of sequestration, senior EM management and the newly confirmed Secretary of Energy continue to stress program and contract management, as an essential focus area for the EM program.

There are no recommendations at this time.

PUBLIC COMMENT PERIOD

Rick McLeod is the Executive Director of the Savannah River Site Community Reuse Organization (SRSCRO). There are eight community reuse organizations across the DOE complex. They were formed in the early 1990s, at that time the SRS had 20,000 employees and was being cut to 12,000 employees. Fifteen community reuse organizations were formed at the time.

The main function of SRSCRO was to look at economic diversification, education initiatives, and to be a community voice of the region. SRSCRO is unique because there are two states in its geographic area. Mr. McLeod also stated that it is a diversified board very engaged and representative of community leadership.

Mr. McLeod wanted to discuss three issues with EMAB and to give EMAB a better understanding of local issues.

Asset revitalization is a cross-cutting issue across the DOE complex. The CROs were formed to help aid development and to convert personal property and real estate into dollars to be used for the economic development in the area. SRSCRO has had a pretty robust program on personal property, despite not receiving any real estate transfers. This is a direction they would like to continue.

There are 310 square miles at SRS, but only 10% is used in an industrial fashion, therefore there is a lot of property that could be used for economic development. SRSCRO is dealing with the previous railroad beds at SRS and old steam lines, by receiving a real estate license from DOE to do some self-performed removal. SRSCRO removed about eleven miles of railroad track and almost eight miles of steam line. He

emphasized that asset revitalization does mean a lot to local communities. It allows communities to go in and get those assets and allows for money savings for DOE.

SRSCRO is also involved in the consent-based consolidated storage issue. Tim Frazier, who was the DFO for the Blue Ribbon Commission, was SRSCRO's lead on developing a study on managing the backend of the fuel cycle. Their community would like to see a push for solutions, such as, next generation reactors that can burn waste, reduce the volume, reprocessing and recycling. There seems to be an emphasis on storage and SRSCRO would like to see that expand.

In terms of the budget, reprogramming was very difficult for local residents. Sites they are getting picked on and sites do not realize that it is happening across the board. Sites do not want to hear why it took so long or why OMB had such difficulties. Mr. McLeod hopes that EMAB will push for more resources.

Mindy Metts, also at SRSCRO, is the Nuclear Workforce Initiative Program Manager. The last time EMAB was in SRS in September of 2009, Dr. Susan Windsor, chair of the SRSCRO Nuclear Workforce Taskforce and president of Aiken Technical College, spoke to EMAB. Dr. Windsor shared results from a workforce study commissioned by the CRO. The study projected a long-term need for 10,000 new nuclear workers within an 80 mile radius of SRS to fulfill federal, contractor and utility workforce needs in the SRS area. At that time the CRO was developing a strategic approach to address the opportunity, since then a nuclear renaissance has occurred in the region, with permits to begin construction on four new nuclear power plants, two at Plant Vogel and two at VC Summer.

It takes about 3,500 people to construct these new reactors at each site and another 800 people to train people and to operate each site. Construction is also progressing at the MOX facility at SRS, where there are about 2,000 workers in place. Budgets do create problems, but the need for workforce still exists at nuclear sites and always will.

In addition to the workforce needs at the new facilities, existing facilities are dealing with an aging workforce. The average age among the 11,000 workers at SRS is 52 years old. Meanwhile, about half of the existing nuclear power plant workers are eligible to retire in the next ten years.

As the nuclear industry has grown in the region, the CRO's Nuclear Workforce Initiative (NWI) has taken form. SRSCRO's vision is that the citizens of their region will develop the skills that are needed for the jobs in their region; they are calling this "Growing Our Own in Collaboration." The NWI academies are going to be implemented for the third summer this year. The program is designed to introduce low income young adults to nuclear career fields through experiential learning.

October 21-25th is National Nuclear Science week and the SRS region will serve as this year's national spotlight. Through the CRO's NWI, they are coordinating activities that

will be highlighted throughout the nation to celebrate SRS's advances through the nuclear science and energy, security and medicine.

Ernie Chapman is with the Economic Development Partnership (EDP) in Aiken, South Carolina. As an organization for the past 15 years, they have taken an immense interest in SRS and its activities.

EDP is concerned about the inadequate funding and the detrimental program changes that are contained in the President's budget.

EDP's grievances with DOE and the budget are in three broad areas. First, risk, seems to be underestimated and underappreciated at SRS. EDP's biggest concern at SRS is this because of the significant amount of materials in old underground tanks, some of which have leaked, some above the water table, and some are in the water table. EDP feels that appreciation is not given to the fact that this is a high population area and therefore the consequences would be greater here. He emphasized that the site does a good job at managing that, but the facilities are old and the materials need to be removed from the site.

EDP's second issue with the site is equity. SRS has taken a larger percentage hit than the comparable sites. EDP believes that DOE has grievously erred on this and that it is not a risk-based allocation, and that DOE would not have come up with these allocations if it was risk-based.

EDP's third area of grievance with DOE is the lack of commitment. EDP believes that there have been multi-year delays on the most important milestones that have been previously agreed to by DOE. There have been delays of four years or more in removing waste from the tanks, or more depending on subsequent budgets. There has been a reduction in the production of canisters for 2014. There were record shipments to WIPP this year, and no budget for shipments to WIPP next year. There is still no program to take care of the research reactor fuel that is currently in L Basin. He stated that it is ironic that DOE will process that fuel, but only enough to ship more into the facility. Mr. Chapman believes that is a ticking time bomb, because it is fuel that was never meant to be stored for a long time period and that facility was never intended for long-term storage.

EDP recommends that DOE submit a budget amendment or reprogramming to Congress. Mr. Chapman believes $100 million is needed to restore the High Level Waste Program operations to where it needs to be, another $100 million or so to get the SWPF and other facilities that are needed to deal with the Salt Program and to get those back online to get those tanks emptied in a timely manner.

Mr. Coffman stated in response to the public comments that one of the things he noticed was that the state of New Mexico is trying to do community development and they have been very aggressive on attracting incentives to attract industry. Mr. Coffman asked whether South Carolina and Georgia capitalize on their workforce.

Mr. McLeod responded that is one of the issues that they are working on, but that they are different from other states because they are a legislative state and the executive branch does not have as much sway, so the branches really need to work together. But, just as Idaho has used INL as way to springboard other nuclear technologies, SRS would like to do something similar. It is a challenge to coordinate both states and to get them to recognize the economic benefit of spring boarding technology.

Mr. McLeod stated that part of the issue is having an EM landlord because their mission is cleanup and not economic development for the area.

BOARD BUSINESS

Approval of Subcommittee Interim Reports

Mr. Estes moved that the Risk Communications Subcommittee interim report be accepted and Mr. Swindle seconded, and the Risk Communications Interim Report was adopted by the Board members.

Dr. Huntoon moved that the APMS interim report be accepted, Ms. Hedges seconded, and the APMS Interim Report was adopted by the Board members.

Approval of EMAB public meeting minutes from December 3, 2012

Mr. Swindle moved that the meeting minutes be accepted, Mr. Estes seconded the motion, and the minutes were adopted by the Board members who participated in the December 3, 2012 meeting.

Date and location for the next EMAB meeting

The next meeting is tentatively scheduled for November 19, 2013, Washington, D.C.

Adjournment

Dr. Huntoon moved adjournment of the meeting. Mr. Estes seconded the motion, and adjournment was approved by the Board. Dr. Ferrigno adjourned the meeting at 3:30 p.m. EDT.

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.