Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

Approved October 8, 2014, Meeting Minutes

The Oak Ridge Site Specific Advisory Board (ORSSAB) held its monthly meeting on Wednesday, October 8, 2014, at the DOE Information Center, 1 Science.gov Way, Oak Ridge, Tenn., beginning at 6 p.m. A video of the meeting was made and may be viewed by contacting the ORSSAB support offices at (865) 241-4583 or 241-4584. The presentation portion of the video is available on the board's YouTube site at www.youtube.com/user/ORSSAB/videos.

Members Present

Noel Berry
Bob Hatcher
David Hemelright, Chair
Jennifer Kasten
Fay Martin
Donald Mei
Greg Paulus
Belinda Price
Wanda Smith
Coralie Staley
Wanfang Zhou

Members Absent

Jimmy Bell
Alfreda Cook
Lisa Hagy, Secretary
Howard Holmes
Jan Lyons, Vice Chair
Mary Smalling
Scott Stout

Liaisons, Deputy Designated Federal Officer, and Federal Coordinator Present

Dave Adler, Department of Energy-Oak Ridge Office (DOE-ORO), Alternate Deputy Designated Federal Officer (DDFO)
Susan Cange, Acting Manager for Environmental Management and ORSSAB DDFO
Kristof Czartoryski, Liaison, Tennessee Department of Environment and Conservation (TDEC)
Connie Jones, Liaison, Environmental Protection Agency (EPA) Region 4 (via telephone)
Melyssa Noe, ORSSAB Federal Coordinator, DOE-ORO

Others Present

Aditya Chourey, Student Representative
Spencer Gross, ORSSAB Support Office
Bill McMillan, DOE
Gloria Mei
Claire Rowcliffe, Student Representative
Jeff Selvy, UCOR
Matt Marston, UCOR

Eight members of the public were present.

Liaison Comments

Ms. Cange – Ms. Cange said an event was held earlier in the day to observe the commencement of demolition of the K-31 Building at East Tennessee Technology Park. This is a significant milestone for the EM Program. When K-31 demolition is finished, only K-27 will be left to be razed. K-27 is being prepared for demolition so crews can move to it when finished with K-31.

Mr. Paulus asked if would have been appropriate to invite members of the board to the event, as well as any future events related to K-27 or the completion of all the demolition work at the site. Ms. Cange agreed it would have been. She said she would talk with the executive officer manages invitation lists to such events and ask that ORSSAB be included on future events.

Ms. Cange proposes to have a 'meet and greet' session sometime in the next couple of months with board members and the 10 members of the EM management team. She believes it would be beneficial for board members to talk with the management team in a non-structured, informal setting and have an opportunity to get to know one another better.

Mr. Adler – Mr. Adler said a response is being written on the board's Recommendation on DOE Oak Ridge Geographical Information System Fact Sheets.

Ms. Jones – no comments.

Mr. Czartoryski – no comments.

Public Comment

None.

Presentation

Mr. McMillan's presentation was on recent accomplishments and challenges for the EM program at Oak Ridge National Lab (ORNL). The main points of his presentation are in Attachment 1.

He began by saying EM has ongoing facility operations that are being conducting outside of any cleanup work. That includes surveillance and maintenance, liquid gaseous waste operations (LGWO), and the disposition of a quantity of uranium-233 from Building 3019 (Attachment 1, page 2).

Future work at ORNL includes decontamination and decommissioning (D&D) and remedial action activities in Bethel Valley and Melton Valley (Attachment 1, page 2).

Mr. McMillan talked about near-term, mid-term, and long-term projects (Attachment 1, page 3). A near-term, high priority project is disposition of the U-233. In the near-term through 2020, the goal is to complete disposition of that portion of U-233 that can be disposed directly and begin downblending operations for the U-233 that cannot be disposed directly. All disposition of U-233 is to be complete in FY 2024. Groundwater investigations and modeling are part of the near-term portfolio scope at ORNL, as well as the on-going LGWO operations and surveillance and maintenance of facilities.

All building demolition and remediation is scheduled for completion by FY 2045.

The challenge of doing this work is that much of it must be done in the central campus of the lab near current science missions and new laboratory facilities (Attachment 1, page 4). Many of the facilities in the central campus are old and deteriorating and some contain radiological material that requires special handling and packaging.

Mr. McMillan discussed a number of recent accomplishments at the lab.

Process Waste Treatment Complex

About a year ago DOE determined failures of the dual media filters at the complex. Two carbon columns were retrofitted for final filtration of solids. A third carbon column was replaced with Mersorb, which removes mercury more effectively (Attachment 1, page 6). Mr. McMillan said by retrofitting the carbon columns rather than replacing the failed dual media filters DOE saved $3-$4 million.

DOE also installed a new sulfuric acid tank, replacing one that had begun leaking.

Planned inspections of stacks

Gaseous waste stacks have not been inspected in 10-15 years. Plans are to use drones, which will hover over the stacks and lower a small camera into each stack to inspect it. Using drones avoids exposing personnel to the hazards of inspecting stacks (Attachment 1, page 7). The hope is to begin the inspections in December.

Molten Salt Reactor Experiment

Routine maintenance is conducted at the reactor site. Defueled salt stored in tanks generates corrosive fluorine gas that must be periodically pumped out and replaced with argon to prevent corrosion (Attachment 1, page 8). The gas is filtered through sodium fluoride traps. Mr. McMillan said the traps are weighed to determine how much uranium has been captured. The amount of uranium captured is low indicating the defueling efforts of the reactor were successful.

Legacy waste

Building 3026 was demolished a few years ago, but the hot cells inside the building were left in place and sealed with fixative. A fixative was also placed on the building pad to prevent runoff of any residual contamination. There has also been continuing characterization and disposition of legacy waste around ORNL including the Molten Salt Reactor and onsite storage facilities (Attachment 1, page 9).

Pratt and Whitney Shield Relocation

The shield was used in experiments during the 1960s. It had been stored in Building 7602 since 1998, but Mr. McMillan said there was enough uranium in the shield that it interfered from a dose perspective with operations in an adjacent facility. In September the shield was relocated to a storage facility in Solid Waste Storage Area 5 in Melton Valley (Attachment 1, page 10).

U-233 Management Progress

Some U-233 is still in storage in Building 3019. It is a special nuclear material that requires a high degree of security. Mr. McMillan said it sets the overall security posture for the lab. Some of the material, the Zero Power Reactor plates, has already been dispositioned for programmatic re-use. Another portion known as Consolidated Edison Uranium Solidification Project material is ready for shipping pending resolution of some issues with the state of Nevada where the material is to be disposed at the Nevada National Security Site. Seventeen canisters of U-233 that have reuse potential have been transferred to the Office of Science. Work is being done to prepare Building 2026 for the downblending and solidification of the remaining inventory of U-233.

Oak Ridge Research Reactor Pool Leak

A leak was detected in September coming from the bottom flange beneath the reactor pool (Attachment 1, page 12). Other leaks have since been detected. UCOR, DOE's prime cleanup contractor is Oak Ridge, is working to locate the source of the leak and develop a long-term plan to stabilize the pool.

Groundwater Strategy
Two activities are underway to implement a groundwater strategy. One is the off-site groundwater assessment to determine if radionuclides are migrating from groundwater on the Oak Ridge Reservation under the Clinch River to privately owned land west of the reservation. The other activity is to develop a model of groundwater flow paths from the reservation (Attachment 12, page 14).

After the presentations a number of questions were asked. Following are abridged questions and answers.

Ms. Price – On the groundwater model, are you developing a conceptual or mathematical model? Is it primarily a physical system model or are you going to be coupling it with solute transport? What's the path forward? Mr. McMillan – It will be a 3D model that looks extensively at depth and length of contaminant movement throughout the region. Ms. Price – What code are you using? Mr. McMillan – It will be using MODFLOW.

Mr. Paulus – The leak at the research reactor is 100 drips a minute. Has that been constant? Mr. McMillan – Since the leak was first observed it's been about the same. We've done some mass balance calculations based on the pool volume and evaporation rates in the building, and while we're seeing 100 drips a minutes, we're losing more than that. We're losing about 100 gallons a day. So there is uncertainty as to where the rest of it is going. We do know that water coming out is collected in the building plumbing systems and it is going for treatment. It's not something that is spreading into the environment. Funding is an issue. UCOR is working the funding estimates. We'll have to work with headquarters to see if there is additional funding that we can obtain for addressing it. Mr. Paulus – You don't have it as a major problem at this point? Mr. McMillan – It's a problem that we need to address. Ms. Cange – Mr. McMillan is right. Our first approach is to see if there is additional funding because this is not something that we planned for and have funding in reserve to use. If there is no additional funding, we have to look within our own funding profiles for all of our various projects. This is something we'll do. We're not going to let this continue. We'll just have to make some difficult decisions about what doesn't get done.

Ms. Staley – How have you determined the 100 gallon loss. Is that water being collected? Mr. McMillan – The leaks we see are falling on the floor in the basement of the building below the pool (Attachment 1, page 12, Sub-pile room). That's the 100 drops a minute we're seeing. Underneath this building is a sump collection system and an underground stream that's surfacing into this sump collection system, which may or not be part of the 100 gallons. We shut off all the water to the pool and monitored the pool level for several days. We did a beaker test to measure evaporation. The difference in the pool volume was ratioed against the beaker test. The 100 gallons a day is the difference between what we account for between the pool level and the evaporation rate. We're not sure where those 100 gallons are going. But the pool is centrally located in the building with the spring underneath. I don't believe it's going outside of the spring. Mr. Selvy – The pool is sitting on about 5-6 feet of concrete. Within that concrete there are experimental facilities behind shield walls that we can't get to. There are floor drains in there and the drains go to a manhole to the LGWO. We know there is flow in those drains. We know the vicinity of the leak, and we know it's between the basement and the first floor. We can't see it, but there is 5 feet of concrete there we can't get through. So we think the water is going to the LGWO.

Mr. Hemelright – What is the ultimate disposition of the 3042 Reactor pool going to be? Mr. McMillan – It will end up being demolished. The materials we have a pictures of (Attachment 1, page 12, shields and plate) would be removed from the pool and disposed at an appropriate facility. Then we'd drain the pool. Ultimately the building would be demolished in the 2030s. Mr. Paulus – The presentation has a slide that says there is a leak of 100 drips a minute. But you also say you're

losing 100 gallons a day you can't account for. When you talk about it, be open. It's a little deceptive the way you presented it.

Mr. Hatcher – What is the level of contamination of the water that is coming out? Mr. McMillan – There is a little bit of tritium in the water; that's how we can trace it back to the pool. That's the only contaminant. Ms. Price – Can you provide us with information about what the tritium levels are? Mr. McMillan – Yes.

Mr. Hatcher – What is the role of the sulfuric acid in the Process Waste Treatment Complex? Mr. McMillan – Sulfuric acid is used to adjust the pH in the precipitation process for treating the waste water.

Ms. Smith – Where is the stream you mentioned coming from and going to? Mr. McMillan – ORNL has springs all over. This one is going right under the building. This stream is being collected in the building sump and being pumped to LGWO. The spring doesn't surface anywhere; it is being sent for treatment.

Mr. Zhou – I know you're looking at completing a record of decision (ROD) for groundwater. Now you're doing the groundwater modeling. Will that be part of the ROD or are you still characterizing? Mr. McMillan – The model will be used to help us make decisions on the prioritization of which plumes we need to address; which ones are the worst and have the potential to migrate off-site. That will help prioritize what plumes to tackle first. Once we complete remedial actions, if there is a plume we can't address completely, the model will help us make decisions to support the ROD as well. Mr. Zhou – Has the remedial investigation been finished? Mr. McMillan – Not yet. There was an interim ROD on groundwater completed about 10 years ago that led to early actions for cleaning remedial sites in Melton Valley. The interim ROD allowed us to do the early actions. After we complete future remedial actions we'll need to go through another round of decision-making on remediation of groundwater in the future with another final ROD.

Ms. Mei – There was a presentation about three years ago on U-233 and there being a Stage I and Stage II evaluation. Have those evaluations been followed? Mr. McMillan – Those evaluations supported the decision that allowed us to go forward with the disposition campaign for about half of the inventory and the use of Building 2026 for the processing campaign. Ms. Mei – Will that be a major modification to Building 2026 to do the downblending and solidification? Mr. McMillan – There is some work being done now. There is a HEPA filter change out, an upgrade of the ventilation system to update the control panel, the fire protection control panel is being upgraded, cleanout of the legacy material out of the hot cells is being finished. There was some laboratory space that had residual waste that is being cleaned out. The actual modifications required for the processing campaign are pretty minor. The doors on the back of the hot cells have to be modified to allow the material to be moved in, but no major modifications. That was the beauty of that facility in that it was pretty well ready to do the campaign.

Committee Reports

Budget & Process – Mr. Paulus said the committee approved its work plan for FY 2015 at the September 24 meeting and committee chair and vice chair were elected, Mr. Paulus and Ms. Price respectively.

The committee had a brief discussion about how the annual meeting and the board meetings are conducted.

Mr. Paulus said the committee will now meet only four times a year. The next meeting will be in March 2015.

EM & Stewardship – Mr. Hatcher reported that the committee received a briefing on the groundwater strategy program from Dan Goode, U.S. Geological Survey, who is acting as a liaison for the board in the groundwater strategy discussions. Mr. Hatcher encouraged members to read the minutes of the committee, which contain more details of the groundwater strategy program.

The committee elected officers for FY 2015. They will remain Mr. Hatcher and Ms. Staley as co-chairs.
The committee will meet on October 15 at 6 p.m. and have a follow on discussion to this meeting's briefing on EM activities at ORNL and develop its FY 2015 work plan.

Public Outreach – Mr. Hemelright said there was discussion at the last committee meeting about the committee's future. Since participation in the committee has fallen off there is a possibility the committee functions will be rolled into the Executive Committee.

Re-working of the ORSSAB exhibit at the American Museum of Science and Energy had been on hold pending discussions about the future of the museum. It was suggested to resume work on the exhibit so it is ready to go regardless of the museum's future.

The committee will meet by teleconference on Tuesday, October 21.

Executive – Mr. Hemelright said the committee is considering taking board meetings to sites around the reservation where EM work is being done. An example could have been this meeting's presentation where the board could have gone to the various sites Mr. McMillan discussed. The intent is to get board members more involved by actually seeing where work is done. Another possibility is going to Zone 1 of East Tennessee Technology Park where a ROD will be done on soils and to Y-12 National Security Complex to see areas affected by mercury.

Mr. Hemelright reiterated Ms. Cange's idea of having an informal get together with project directors to get to know them better and understand their responsibilities.

Another idea for a board meeting is a facilitated open topic, round robin discussion of various EM-related issues.

Mr. Paulus said if meetings are taken to different sites, board members should provide input on the best days and times to do that since evening field trips might not be feasible.

The next committee meeting will be October 22 at 6 p.m.

Mr. Hemelright attended the recent Fall EM SSAB Chairs' meeting, along with Ms. Staley, in Idaho. He commended Mr. Adler for his openness in sharing budget information with board. He said other boards do not receive budget briefings as does ORSSAB.

Mr. Hemelright said that Mark Whitney, the Acting Assistant Secretary for EM, talked about the challenges across the DOE EM complex. The primary challenge will be funding. Mr. Whitney predicted flat funding of about $5.6 billion across the complex for the next several years. Mr. Whitney spoke how the shutdown of the Waste Isolation Pilot Plant (WIPP) affects all of the sites that send transuranic waste to the plant. The plant is expected to reopen in about 18 months.

Mr. Whitney said while there are challenges, DOE EM needs to celebrate its successes. This is the 25th year of the EM program. The EM footprint has been reduced about 90 percent during that time. A priority of EM is to keep the SSABs and the public engaged in EM's work to complete cleanup across the complex.

Also at the chairs' meeting, Frank Marcinowski, Deputy Principal Assistant Secretary for Waste Management, provided more detail about the WIPP closure and what is being done to reopen the plant. Mr. Hemelright asked if above ground space could be made available at WIPP so feeder sites could continue to send waste. Mr. Marcinowski said that is being considered. The chairs of the SSABs later agreed to a draft recommendation to that effect. The recommendation will be placed before the individual boards for approval.

David Borak, the EM SSAB Designated Federal Officer, said a review of all the boards, after 20 years of operations, indicated that their roles were vital to the successes of the EM program.

Announcements and Other Board Business

ORSSAB's next scheduled meeting will be Wednesday, November 12, 2014, at the DOE Information Center. The topic is to be determined.

The minutes of the September 10, 2014, meeting were approved.

Lacking a quorum to approve recommendations, the board did not act on the EM SSAB Chairs' Recommendation to Initiate a Process of Permit Modification for Additional Surface Storage at the WIPP.

Federal Coordinator Report

Ms. Noe said a new membership drive is about to get underway. She asked that if current members know of people who might be interested in joining the board to let her or staff know. She said new membership packages to DOE Headquarters have to be submitted February 2. Applications to the board can be accepted through November.

Additions to the Agenda

None.

Motions

10/8/14.1

Mr. Paulus moved to approve the minutes of the September 10, 2014, meeting. Ms. Smith seconded and the motion passed **unanimously.**

The meeting adjourned at 7:23 p.m.

Action items

1. The idea of non-board members staffing exhibits will be discussed at an Executive Committee meeting. **Completed 10/1/14.** The Executive Committee decided that it doesn't seem right to have staff talking for the board at outreach events.
2. Mr. McMillan will get information on tritium levels in water leaking from the Research Reactor pool.

Attachments (1) to these minutes are available on request from the ORSSAB support office.

I certify that these minutes are an accurate account of the October 8, 2014, meeting of the Oak Ridge Site Specific Advisory Board.

Dave Hemelright

Dave Hemelright, Chair January 15, 2015
Oak Ridge Site Specific Advisory Board
DH/rsg