

# Oak Ridge Site Specific Advisory Board Monthly Meeting



Wednesday, September 14, 2016, 6 p.m.

Olive Garden  
7206 Kingston Pike  
Knoxville, Tennessee 37919

The mission of the Oak Ridge Site Specific Advisory Board (ORSSAB) is to provide informed advice and recommendations concerning site specific issues related to the Department of Energy's (DOE's) Environmental Management (EM) Program at the Oak Ridge Reservation. In order to provide unbiased evaluation and recommendations on the cleanup efforts related to the Oak Ridge site, the Board seeks opportunities for input through collaborative dialogue with the communities surrounding the Oak Ridge Reservation, governmental regulators, and other stakeholders.

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1. September
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## BOARD MINUTES/RECOMMENDATIONS & MOTIONS

1. June 8, 2016, unapproved meeting minutes
2. August 6, 2016, unapproved meeting minutes
3. FY 2017 ORSSAB Officer Elections

## REPORTS & MEMOS

1. EM Project Update
2. Travel Opportunities for FY 2017

# AGENDA



**Oak Ridge Site Specific Advisory Board**  
**Wednesday, September 14, 2016, 6:00 p.m.**  
**Olive Garden Restaurant**  
**7206 Kingston Pike, Knoxville, Tenn.**

**AGENDA**

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- I. Welcome and Announcements (E. Trujillo) .....6:00–6:05
  - A. Next Meeting: Wednesday, October 12  
Presentation Topic: State of the Oak Ridge Environmental Management Program
- II. Comments from the EPA and TDEC Liaisons  
(C. Jones, K. Czartoryski) .....6:05–6:15
- III. Public Comment Period (L. Manning).....6:15–6:20
- IV. Presentation: Vision 2020: Planning for the Future of the East Tennessee Technology Park,  
Including Reuse, Historic Preservation, and Stewardship (S. Cooke, D. Adler)  
(Issue Group Members: Deaderick).....6:20–6:45  
Question and Answer Period .....6:45–7:00
- V. Call for Additions/Approval of Agenda (E. Trujillo) .....7:00
- VI. Motions .....7:00–7:10
  - A. June 8, 2016, Meeting Minutes (E. Trujillo)
  - B. August 6, 2016, Meeting Minutes (E. Trujillo)
  - B. Election of FY 2017 Officers (M. Smalling)
- VII. Responses to Recommendations & Alternate DDFO’s Report (M. Noe).....7:10–7:15
- VIII. Committee Reports .....7:15–7:20
  - A. EM/Stewardship (E. Trujillo)
  - B. Executive (E. Trujillo)
    - 1. Annual Meeting
- IX. Additions to Agenda & Open Discussion .....7:20–7:30
- X. Adjourn .....7:30

# CALENDARS



# Oak Ridge Site Specific Advisory Board

## September 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5 Labor Day Staff Holiday	6	7 Executive Committee Meeting 6:00-7:30 p.m.	8	9	10
11	12	13	14 ORSSAB Monthly Meeting 6:00-7:30 p.m.  *At Olive Garden 7206 Kingston Pike Knoxville, TN 37919	15	16	17
18	19	20	21	22 EM & Stewardship Committee Meeting 6:00-7:30 p.m.	23	24
25	26	27	28 No EM & Stewardship Committee Meeting*  *moved to 9/22	29	30	

All meetings will be held at the DOE Information Center unless noted otherwise.

ORSSAB Support Office: (865) 241-4583 or 241-4584 DOE Information Center: (865) 241-4780

ORSSAB Conference Call Line: (866) 659-1011; enter the participant code when prompted: 3634371#

Board meetings on cable TV and YouTube	
<b>Knoxville:</b> Charter Channel 6, Comcast Channel 12	Sundays at 9 a.m.
<b>Lenoir City:</b> Charter Cable Channel 193	Wednesdays, 4 p.m.
<b>Oak Ridge:</b> Channel 12	Monday, September 26, 7 p.m.
<b>Oak Ridge:</b> Channel 15	Monday, Wednesday, Friday, 8 a.m. & noon
<b>YouTube</b>	<a href="http://www.youtube.com/user/ORSSAB">http://www.youtube.com/user/ORSSAB</a>



# Oak Ridge Site Specific Advisory Board October 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5 Executive Committee Meeting 6:00-7:00 p.m.	6	7	8
9	10 Columbus Day Staff Holiday	11	12 ORSSAB Monthly Meeting 6:00-7:30 p.m.	13	14	15
16	17	18	19	20	21	22
23	24	25	26 EM & Stewardship Committee Meeting 6:00- 7:30 p.m.	27	28	29
30	31					

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<b>Oak Ridge:</b> Channel 15	Monday, Wednesday, Friday, 8 a.m. & noon
<b>YouTube</b>	<a href="http://www.youtube.com/user/ORSSAB">http://www.youtube.com/user/ORSSAB</a>

## FY 2016 ORSSAB Work Plan/Schedule

Executive	Monthly meeting	Site tour	EM/Stewardship
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Date	Event	Topic	Presenter	Issue Group	Location
<b>OCTOBER 2015</b>					
Wed., 10/7	Executive	Work plan rollout			DOEIC
Wed., 10/14	Monthly meeting	Progress at ETTP	Cain		DOEIC
Sat., 10/24	Site tour	On-site tour Q&A			ETTP
Wed., 10/28	EM/Stewardship	Work plan rollout; ETTP Zone 1 Proposed Plan detailed discussion			DOEIC

<b>NOVEMBER</b>					
Wed., 11/4	Executive	General business			
Tues., 11/10	Monthly meeting	The Federal Oversight Model- Ensuring a Safe Work Environment <i>(Meeting date changed due to Veteran's Day on 11/11)</i>	Armstrong		Chuy's, 9235 Kingston Pike, Knoxville
	Site tour	<i>(No site tour)</i>			
Wed., 11/25	EM/Stewardship	<i>(No meeting--due to upcoming Thanksgiving holiday)</i>			

<b>DECEMBER</b>					
Wed., 12/2	Executive	<i>(No meeting)</i>			
Wed., 12/9	Monthly meeting	<i>(No meeting)</i>			
	Site tour	<i>(no site tour)</i>			
Wed., 12/23	EM/Stewardship	<i>(No meeting--due to holidays)</i>			

<b>JANUARY 2016</b>					
Wed., 1/6	Executive	General business			DOEIC
Wed., 1/13	Monthly meeting	Waste Management	McMillan, Henry, DeMonia		DOEIC
Postponed	Site tour	On-site tour/Q&A			TWPC
Wed., 1/27	EM/Stewardship	Waste Management detailed discussion			DOEIC

<b>FEBRUARY</b>					
Wed., 2/3	Executive	General business			DOEIC
Wed., 2/10	Monthly meeting	Groundwater Monitoring Program	McMillan	Cook, Hatcher, Deaderick, Smalling	DOEIC



Date	Event	Topic	Presenter	Issue Group	Location
TBD	Site tour	<del>On-site tour/Q&amp;A</del>			ORR
Wed., 2/24	EM/Stewardship	Groundwater Monitoring Program presentation detailed discussion			Leidos offices

MARCH					
Wed., 3/2	Executive	General business			DOEIC
Wed., 3/9	Monthly meeting	FY 2018 Budget Formulation and Prioritization of Projects	Thompson		DOEIC
	Site tour	<i>(No site tour)</i>			
Wed., 3/23	EM/Stewardship	FY 2018 Budget Formulation and Prioritization of Projects detailed discussion			DOEIC

APRIL					
Wed., 4/6	Executive	General business			DOEIC
Wed., 4/13	Monthly meeting	(No ORSSAB monthly meeting due to Chairs meeting)			
Tues., 4/19	Chairs meeting tour	Chairs meeting tour			ORR
Wed., 4/20 Thurs., 4/21	Chairs meeting	Chairs meeting			DoubleTree, Oak Ridge
Wed., 4/27	EM/Stewardship	Continued discussion of FY 2018 budget formulation and project prioritization and preview of Community Budget Workshop			DOEIC

MAY					
Wed., 5/4	Executive	General business			DOEIC
Wed., 5/11	Monthly meeting	EM Disposal Facility (EMDF)	Henry	Cook, Bignell, Hatcher, Wilson, Trujillo, Smalling	DOEIC
<i>Postponed</i>	Site tour	On-site tour Q&A			EMDF/EMWMF
Wed., 5/25	EM/Stewardship	EMDF detailed discussion			DOEIC
Thurs., 5/26	Community budget workshop	Community Budget Workshop			Pollard Auditorium

JUNE					
Wed., 6/1	Executive	General business			DOEIC
Wed., 6/8	Monthly meeting	Technology Development to Support Mercury Cleanup Strategy	Peterson	Wilson, Trujillo, Bignell, Smalling	DOEIC

Date	Event	Topic	Presenter	Issue Group	Location
Thurs., 6/16	Site tour	On-site tour Q&A	Phillips		ORNL Aquatics Lab
Wed., 6/22	EM/Stewardship	Technology Development to Support Mercury Cleanup Strategy detailed discussion	Darby, Peterson		DOEIC

### JULY

Wed., 7/6	Executive	Annual meeting planning			DOEIC
Wed., 7/13 Sat., 7/23	New member training & tours	<i>(No ORSSAB monthly meeting)</i>	Adler		New Hope Center/ORR
Wed., 7/27	EM/Stewardship	<i>(No meeting)</i>			DOEIC

### AUGUST

Wed., 8/3	Executive	<i>(No meeting)</i>			
Sat., 8/6	Annual meeting	FY 2016 review and planning for FY 2017			Tremont Lodge, Townsend
Wed., 8/10	Monthly meeting	<i>(No ORSSAB monthly meeting due to Annual meeting)</i>			
	Site tour	<i>(No site tour)</i>			
Wed., 8/24	EM/Stewardship	<i>(No meeting)</i>			

### SEPTEMBER

Wed., 9/7	Executive	General business			DOEIC
Wed., 9/14	Monthly meeting	Vision 2020-Planning for the Future of ETPP including Reuse, Historic Preservation and Stewardship	Cooke, Adler	Deaderick	Olive Garden Restaurant, 7206 Kingston Pike, Knoxville
TBD	Site tour	On-site tour/Q&A			ETTP
Wed., 9/28	EM/Stewardship	Vision 2020 detailed discussion; update from the groundwater model Technical Advisory Group	Cooke, Adler; Goode	Deaderick; Cook, Hatcher, Deaderick, Smalling	DOEIC

# BOARD MINUTES/ RECOMMENDATIONS



*Many Voices Working for the Community*

# Oak Ridge Site Specific Advisory Board

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## Unapproved June 8, 2016, Meeting Minutes

The Oak Ridge Site Specific Advisory Board (ORSSAB) held its monthly meeting on Wednesday, June 8, 2016, at the DOE Information Center, 1 Science.gov Way, Oak Ridge, Tennessee, beginning at 6 p.m. A video of the meeting was made and may be viewed by contacting ORSSAB support offices at (865) 241-4583 or (865) 241-4584. The presentation portion of the video is available on the board's YouTube site at [www.youtube.com/user/ORSSAB/videos](http://www.youtube.com/user/ORSSAB/videos).

### Members Present

Richard Burroughs	David Hemelright, Secretary	Mary Smalling (via telephone)
Alfreda Cook, Vice Chair	Donald Mei	Scott Stout
Martha Deaderick	Greg Paulus	Ed Trujillo
Mike Ford	Belinda Price, Chair	Dennis Wilson
Bob Hatcher	Elizabeth Ross	

### Members Absent

Leon Baker  
Howard Holmes  
Jennifer Kasten  
Wanfang Zhou

### Liaisons, Deputy Designated Federal Officer, and Alternates Present

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

### Others Present

Scott Brooks, ORNL	Fay Martin, EM & Stewardship
Thomas Gebhart, TDEC	Jimmy Massey, UCOR/RSI
Ashley Huff, ORSSAB Support Office	Pete Osborne, ORSSAB Support Office
John Huotari, Oak Ridge Today	Mark Peterson, ORNL
Michael Logan, UCOR/RSI	Roger Petrie, UCOR/RSI
Lara Manning, ORSSAB Student Rep	Elizabeth Phillips, DOE
Charlie Mansfield, UCOR/RSI	Ellen Smith, EM & Stewardship

Eighteen members of the public were present.

**Liaison Comments**

**Ms. Cange** – DOE held its annual community workshop on May 26, 2016, to discuss FY 2018 budget formulation and priorities for Oak Ridge cleanup. The 2016 budget workshop included approximately 100 participants. On behalf of the advisory board, Dave Hemelright presented ORSSAB's recent recommendation to DOE on OREM's FY 2018 budget request. Three prime contractors for Oak Ridge cleanup were featured in panel discussions on the role EM plays in enabling the ongoing missions at Oak Ridge National Laboratory (ORNL) and the Y-12 National Security Complex (Y-12), as well the future mission at East Tennessee Technology Park (ETTP) as a private-sector industrial park.

The demolition of Building K-27, initiated in February 2016, continues on schedule. Building K-27 is the last of the five gaseous diffusion buildings at the ETTP site. Completion of the demolition project will realize OREM's "Vision 2016," the program's goal for the safe and successful demolition and removal of all five gaseous diffusion buildings at ETTP. The achievement will make the ETTP site the first in the world to have successfully completed the cleanup and removal of a uranium enrichment complex. A large celebration will commemorate the milestone and has been scheduled for August, during the week before Labor Day. All board members will be invited to attend. Announcements regarding the celebration will follow as more details develop.

The Energy Technology and Environmental Business Association will host a public information session this summer on the planning for a new onsite disposal facility. The public event will provide information and answer questions from the community on DOE's proposed new onsite disposal facility prior to an official proposed plan and public comment period. Board members will be notified of further details for the information session once the date has been set.

**Mr. Adler** – The board's recommendation on the FY 2018 budget request has been received and is being transmitted to headquarters along with input from regulators. Official correspondence is also being prepared. A "thank you" letter will be sent to the board soon.

**Ms. Jones** – No comment.

**Mr. Czartoryski** – No comment.

**Public Comment**

None.

**Presentation**

Mark Peterson, ORNL, discussed technology development to support the Mercury Cleanup Strategy. His presentation (Attachment 1) focused on "Aquatic Ecology Research and Technology Development in East Fork Poplar Creek (EFPC)." Mr. Peterson discussed the problem of mercury contamination in EFPC and highlighted the aquatic ecology research being performed at ORNL in an effort to develop technologies for future applications to treat and reduce mercury in soil, water, and fish.

**Background on Aquatic Ecology Research and Mercury Contamination in Oak Ridge**

As one of the few aquatic ecology research facilities in the southeast, ORNL's Aquatic Ecology Lab (AEL) addresses some of the most challenging energy and environmental issues across the U.S. A major area of its current research focuses on the problem of mercury contamination in EFPC, stemming from enrichment activities begun in the 1950s during which large quantities of the element were lost to the environment from operations at Y-12. Over a thirty-year period, from 1953-1983, an estimated 700,000 pounds of mercury was released from Y-12, and of that total, an estimated 239,000 to 470,000 pounds of mercury went into EFPC (slide 6).

Though the AEL was established in the 1970s, aquatic ecology research in Oak Ridge goes back to shortly after the Manhattan Project in the late 1940s. Supporting what was then known as the “Clinton Laboratories” (today’s ORNL), researchers were already beginning to survey nearby streams for radioactivity and collect environmental data. However, it was not until the 1980s, through the Biological Monitoring and Assessment Program, that a serious effort began to assess and evaluate mercury contamination and its impact on the EFPC ecosystem. New environmental legislation led to major actions in the 1990s to remediate contaminated soils on the flood plain. Those actions resulted in the removal of large amounts of mercury and successfully reduced the risk of contamination from the flood plain itself. Since that time, subsequent remedial actions have been focused on the Upper EFPC Watershed area within Y-12, where the headwaters for EFPC are located, as well as several excess facilities which also contribute to the mercury that continues to enter the creek from Y-12.

Strategic planning with regulators in the 2013-2014 time period helped establish future milestones for DOE’s Mercury Cleanup Strategy. The first future priority is the construction of the Mercury Treatment Facility, already in design, to address the source water and reduce mercury inputs before EFPC exits Y-12 and proceeds downstream. A second, related effort was set to address mercury contamination in Lower EFPC, the portion of the creek which proceeds westward from Y-12 and flows through the city of Oak Ridge to join the Clinch River near the ETTP. Even with the remedial and abatement actions planned for Y-12, further strategies will be needed for the downstream environment of EFPC. Source removal, though a high priority, is only one facet of the overall Mercury Cleanup Strategy.

In addition to the Mercury Treatment Facility planned for Y-12, the overall cleanup strategy emphasizes the importance of research and technology development. ORNL researchers are developing and evaluating environmentally-friendly approaches for future downstream applications in Lower EFPC. The goal is to develop approaches that will preserve or enhance the natural resources of EFPC. Conventional remediation activities, such as soil and bank removal, are intrusive and destructive. A stated intent of research and technology development to support the Mercury Cleanup Strategy is to avoid major disruptions to the ecosystem while also reducing risk and lowering mercury concentrations in water, soil, and fish.

#### Mercury TD in Lower EFPC

Mr. Peterson highlighted the “technology readiness” level or pyramid approach to developing technologies that will support mercury cleanup (slide 9). Early groundwork includes research and literature review as well as site characterization work. Over time, the project will increasingly conduct lab and field testing that will lead to larger pilot studies. Those pilot studies will help inform an evaluation of recommended alternatives and potential final actions.

Mercury technology development and mercury-related cleanup activities will continue for many years. The project currently focuses on three major tasks (slide 10):

- Soil and Groundwater Source Control—to decrease mercury source inputs, or **flux**.
- Water Chemistry and Sediment Manipulation—to decrease mercury concentration and limit **methylation**.
- Ecological Manipulation—to decrease mercury **bioaccumulation**.

With many contaminants source control, such as removal or treatment, is the typical approach to remediation. One area of investigation is to focus on potential actions that limit the amount of inorganic mercury flux entering the aquatic system from downstream soil, sediments, and groundwater. Controlling mercury flux is one aspect of technology development. Currently, characterization work is being done to evaluate the use of various sorbents to bind or, in some cases, remove mercury deposits in soils and sediments. Bank and soil stabilization technologies are also potential source control applications that might be utilized downstream. (See slides 12-13 for further information on soils and banks).

Mercury is a complex contaminant that often behaves differently depending on the chemical and biological characteristics of the aquatic system. For example in EFPC, source control actions at Y-12 have substantially decreased mercury concentrations in water, while fish concentrations have not responded and remain above regulatory requirements for safe consumption. An important process in the downstream environment is mercury methylation, the microbial-driven conversion of inorganic mercury to its toxic form as methylmercury. Although methylmercury in water is relatively low, methylmercury easily biomagnifies within the aquatic food chain, with high mercury levels in fish providing a potential source of mercury to humans and wildlife through consumption. Controlling methylmercury and subsequent bioaccumulation is a difficult technological challenge, but also a potential opportunity to limit mercury risks without largescale and expensive source soil removal. Current research and technology development is focused on obtaining a greater understanding of EFPC water chemistry, flow conditions, sediment chemistry, and the methylation process (see slides 14-16 for further information on water chemistry and sediments). With a greater understanding of the EFPC system, new technologies can be explored that could change water or sediment chemistry and limit methylation or enhance demethylation (the return of methylmercury to its non-toxic inorganic state).

A third area of investigation and technology development is focused on the potential to limit the bioaccumulation of methylmercury through the food chain. Biological factors that influence the level of mercury in fish at the top of the food chain include fish size and age, the length of the food chain (longer food chains have greater opportunities for biomagnification), and the species' bioaccumulation potential. Since organisms differ in their potential for bioaccumulating methylmercury, one way to address the problem of bioaccumulation would be through ecological manipulations that enhance the populations of low bioaccumulators, change fish age or growth, or shorten the food chain. Current research is evaluating the role of algae on the methylation and bioaccumulation process, as algae populations supply the greatest biomagnification step. Other potential strategies involve stocking native low-bioaccumulating species, such as some fish and mussels (see slides 17-19 for further information on bioaccumulation).

#### Summary & Future Developments

Future activities for mercury cleanup in Lower EFPC include the development of several control technologies, potentially utilizing sorbents to reduce mercury inputs from soil, water, and sediment; applying chlorine removal techniques to decrease dissolved mercury concentrations emanating from Y-12; and possibly reintroducing native mussels that may change the mercury inventory and form of mercury in the system through removal of suspended algae and particles (slide 20).

A major step forward will occur with the construction of the EFPC Field Research Station, a planned near-creek research facility that will provide a creek "flow-through" system to aid researchers in evaluating approaches and technologies to decrease in-stream mercury (slide 21).

*After the presentation, board members raised the following questions:*

Mr. Hatcher—Given that stream waters rise and fall, how are you accounting for fluctuating surface levels in your measurements, such as those on slide 13 (see Attachment 1)? Mr. Peterson clarified that the recorded measurements on slide 13 are under base flow conditions. He went on to associate Mr. Hatcher's point about water level fluctuations with an overall point about mercury flux in EFPC, which is largely storm driven. That means, mercury deposits high in the banks may be unavailable to the system except during relatively rare high flow events or during winter frost spalling.

Mr. Paulus—Are the figures for 239,000 to 470,000 pounds of mercury (on slide 6) estimates of the total amount released from Y-12 during the 1953-1983 timeline? Do those figures suggest that all of the material lost from Y-12 ended up in EFPC? Mr. Peterson explained that the figures specifically correspond to the creek and are estimates for the amount of mercury believed to have entered EFPC during that timeframe. Mr. Brooks added that during the time when mercury was actively being

discharged from Y-12, sampling operations took place, so data do exist for these estimates. An estimated 128,000 kilograms was discharged directly into creek, which is a fraction of the total loss for mercury. Ms. Cange added that the general estimate given for the total loss of mercury to the environment during that timeframe is approximately 700,000 pounds. Of that 700,000 pounds, an estimated 239,000 to 470,000 pounds (slide 6) went into the creek.

Mr. Paulus asked a follow-up question on the extent of mercury contamination in EFPC. How far down river is this a concern? Mr. Peterson said that in testing mercury concentrations in fish, the farthest downstream exceedances occur slightly downstream of the confluence of Poplar Creek and the Clinch River.

Mr. Wilson asked about eco-manipulation and the possibility of using mussels to decrease the level of methylmercury in the creek. Even though the mussels would bioaccumulate mercury, it would not really be removed from the system, would it? When the mussels complete their lifecycle, the mercury would be returned to the sediments. Mr. Peterson said that mercury would not be removed in that scenario. Some applications elsewhere have introduced mussels in cages that can then be harvested, a scenario which would remove inorganic mercury. However, the goal for ecological manipulation would not necessarily need to be removal, he explained. Research for mercury technology development seeks to control or manipulate water chemistry to minimize the level of methylmercury in order to limit risk and routes of exposure to humans and wildlife. Mussels could be used to change water chemistry and suspended particle processes that limit the availability of mercury to methylating bacteria. Since mussels accumulate inorganic mercury, rather than methylmercury, they pose little risk to any wildlife that might eat them, such as raccoons. Also, unlike fish, mussels are not considered a food source for humans and are not eaten by the local population.

Mr. Wilson asked a follow-up question on soil and groundwater source control strategies and the possible use of sorbents. Could you elaborate on the applications being considered? Is the idea to put a membrane on the bank? Mr. Peterson explained that currently characterization work is being done to determine the best approach. Mats and barriers are possible options, as are other solutions to limit erosion, such as plant cover. Sorbents differ widely in type and application, all with potential advantages and disadvantages for use in EFPC, so characterization work needs to be done before any are introduced into the ecosystem. A number of sorbents are being evaluated; carbon fiber has shown promising results in lab testing so far.

Mr. Trujillo asked about previous flood plain remediation work. A portion of the flood plain has already been remediated, so does the remaining mercury from the flood plain still get into the banks? Mr. Peterson stated that in recent evaluations contributions from the flood plain, such as through leaching or surface erosion, appear to be minor and have a much smaller impact on mercury flux in EFPC than current releases from Y-12 or the bank soils. Prior action on the flood plain has effectively reduced its risk. The primary drivers for mercury flux in EFPC, and thus the focus for developing technologies, are the creek bank and the erosion of the bank soils.

Mr. Trujillo also asked about the methylation process. How much is understood about the process of methylation? For instance, can we accurately estimate the amount of methylmercury that will be produced given the figures for releases of inorganic mercury? Mr. Peterson reiterated the complexities of the methylation process. High levels of inorganic mercury do not necessarily result in a high level of methylmercury. In some cases, low levels of inorganic mercury have resulted in high degrees of methylation. The correlation between the two states is influenced by biological and non-biological factors that are themselves dynamic or given to change, which is why research prior to any remedial action is vital for a mercury cleanup strategy. Natural shifts in the ecosystem and especially the food chain can have a dramatic impact on mercury bioaccumulation. Researchers are looking very closely at the methylation process, but a great degree of uncertainty remains.



Mr. Trujillo asked if the Mercury Treatment Facility would play a role in reducing methylmercury in EFPC. What is the status of the Mercury Treatment Facility planned for Y-12, and would its design address mercury methylation? Ms. Cange stated that design work for the facility is being performed by UCOR. Standard technology will be utilized to remove inorganic mercury from the water released at Y-12 in order to reduce mercury flux in the water. No innovations specific to removing methylmercury figure into the design. Mr. Peterson provided a follow-up response to help differentiate between the strategies for reducing mercury flux and those to address mercury methylation. He explained that in one aspect, the total concentration of mercury in EFPC presents a challenge with a straightforward solution. Higher concentrations of mercury exist near the source waters in Y-12 and are more dilute downstream. The Mercury Treatment Facility will address the source waters to remove mercury and reduce the concentration of mercury flux overall. The related problem of methylmercury, however, presents a very complex challenge with a more complicated approach. Relatively low levels of methylmercury exist near Y-12, but unlike inorganic mercury, concentrations of methylmercury increase with distance downstream. Efforts to remove inorganic or elemental mercury from the environment may not result in decreased methylation. While the Mercury Treatment Facility will address one aspect of mercury remediation, ORNL's researchers are developing strategies for addressing methylmercury and for implementing remediation activities downstream to complement the overall cleanup strategy for mercury.

Mr. Hemelright asked if the methylation in fish is generational or passed on through reproduction? Mr. Peterson said that methylmercury in fish is largely food chain driven. Evidence does not suggest methylmercury to be toxic to fish, nor does it appear to have an effect on reproduction.

Mr. Hemelright also asked for clarification of the basic differences in elemental (liquid) mercury, inorganic mercury, and methylmercury. Mr. Peterson explained that very little elemental mercury exists in the EFPC environment, though some is present near buildings where past spills occurred, such as those at Y-12. Inorganic mercury, or mercury salts, binds in the environment as red-tinted rock. Methylmercury is largely generated by microbial organisms. The levels of methylmercury in water are orders of magnitude lower than the levels of inorganic mercury. However, even though very little methylmercury exists in the water of EFPC, it has an enormous impact on the food chain, and high levels can be observed in predatory fish.

Mr. Adler summarized the overall approach to mercury cleanup, explaining that a metallic and inorganic mercury problem exists at the Y-12 area, which will be addressed by decontamination and decommissioning activities as well as the water treatment program. The methylmercury problem presents downstream and poses a risk of absorption to fish. The methylmercury problem will be addressed by the ORNL efforts toward technology development to support mercury cleanup. So, a two-phase approach is being applied to mercury cleanup.

Mr. Hatcher said that releases of mercury from water and also buildings at Y-12 involve a straightforward approach. We can tear down the buildings and clean the water before it enters the creek, he stated. He further suggested that action might be taken to remediate the mercury downstream by removing banks and sediments, especially if the deposits are not too deep in the flood plain.

Ms. Cook asked about the dangers of mercury for humans. Is the mercury in EFPC only a hazard to humans if they eat the fish? Or does contact with the water also pose a risk? Ms. Cange clarified that the only risk to humans would be from consuming large amounts of contaminated fish or invertebrates. Mr. Peterson stated that contact with water does not pose a risk to humans. Mr. Czartoryski cautioned that methylmercury can be absorbed through the skin, and postings on EFPC caution people against contact with the water due to the presence of methylmercury and bacteria. Mr. Adler explained that while methylmercury is more easily absorbed through skin than inorganic mercury, all risk assessment work has determined dermal absorption not to be a significant exposure pathway. He reiterated that the only risk of exposure to humans would come from eating large amounts of contaminated fish, not from recreational swimming or other forms of contact with the water itself.

Ms. Smith asked about the terminology distinction between upstream and downstream or “upper” EFPC vs. “lower” EFPC. Mr. Peterson explained that ORNL researchers are focused on Lower EFPC, or the area outside of Y-12, where the creek originates. Lower EFPC flows westward through Oak Ridge from the Upper EFPC Watershed area in Y-12 and ends near ETTP. Upper EFPC is synonymous with the watershed area within the Y-12 facility, while Lower EFPC pertains to the downstream region of flow outside of Y-12.

## **Committee Reports**

### **EM & Stewardship**

Dr. Hatcher reported –

- Issue managers convened via conference call on May 25, 2016, to discuss a possible recommendation on the DOE’s proposed Environmental Management Disposal Facility. A draft recommendation is in progress.
- A follow-on tour for Mercury Technology Development is planned. Board members are invited to participate in a tour of the Aquatic Ecology Laboratory and chemistry laboratories at ORNL on Thursday, June 16, 2016, at 9 a.m. To participate in the tour, notify [Ashley.Huff@orem.doe.gov](mailto:Ashley.Huff@orem.doe.gov).
- The next EM & Stewardship Committee meeting is scheduled for June 22, 2016, at 6 p.m. Discussion will follow on the June 8, 2016, ORSSAB presentation on technology development to support the Mercury Cleanup Strategy and the June 16, 2016, site tour at ORNL.

### **Executive**

Ms. Cook reported –

- The Executive Committee did not meet in June and has no outstanding comments to report.
- The next meeting of the Executive Committee is scheduled for August 3, 2016, at 6 p.m.

## **Announcements and Other Board Business**

- In lieu of ORSSAB’s next monthly meeting, new member training will occur on July 13, 2016, at the DOE Information Center. Existing members are welcome to attend.
- The Annual Planning Meeting is set for Saturday, August 6, 2016, 9 a.m. to 2:30 p.m., at the Tremont Lodge in Townsend, Tennessee.
- Six board members will retire from ORSSAB at the end of June. Alfreda Cook, Bob Hatcher, Jennifer Kasten, Donald Mei, Scott Stout, and Wanfang Zhou were recognized by DOE and the board at the June 8, 2016, meeting and presented with service awards.

## **Alternate DDFO Report**

Ms. Noe reported –

- New member packages have been sent to headquarters for review and are awaiting the final signature by EM Assistant Secretary Monica Regalbuto.
- The Annual Planning Meeting has been scheduled for Saturday, August 6, 2016. It will be held in the same location as last year’s meeting at the Tremont Lodge in Townsend, Tennessee. The time has been revised for 9 a.m. to 2:30 p.m. on Saturday. An agenda is being finalized and will be provided to the board prior to the meeting.

## Motions

### 6/8/16.1

Mr. Hemelright moved to approve the minutes of the May 11, 2016, board meeting. Mr. Paulus seconded and the motion passed **unanimously**.

### 6/8/16.2

Mr. Hemelright moved to elect the Nominating Committee for FY 2017 board officers to be comprised of Mary Smalling, Dennis Wilson, and Richard Burroughs, all of whom accepted nominations. Mr. Hatcher seconded and the motion passed **unanimously**.

## Action Items

### *Open Action Items*

1. Mr. Adler will update Mr. Czartoryski and the board on the status of a response to TDEC's letter concerning a request for additional EM milestones. (*Carryover from 3/9/16*).

### *Closed Action Items*

1. DOE will provide an update on the final analysis of groundwater samples collected during the third sampling event in February 2016. (*Carryover from 3/9/16*). **Closed.** Dennis Mayton, DOE, provided a follow-up from the February 2016 ORSSAB meeting to the board with the results of the Confirmation Sampling event completed during the second quarter of FY 2016. "The lab results from the event indicated there were no exceedances of U.S. EPA National Primary Drinking Water Standards. DOE continues to prepare the Remedial Site Evaluation Report which has a milestone of November 15, 2016."
2. Ms. Noe will report on the status of soliciting new student representatives from area high schools, potentially on a rotating schedule. **Closed.** The issue of recruiting student representatives to the board, raised during a meeting of the Executive Committee, will hold until next year's selection process begins. DOE and ORSSAB staff are evaluating recruitment practices to determine the best approach for next year's requests for new student representatives. The status will be addressed prior to additions made to the board in May 2017.

The meeting adjourned at 7:27 p.m.

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 June 8, 2016, meeting of the Oak Ridge Site Specific Advisory Board.

Dave Hemelright, Secretary

Belinda Price, Chair  
Oak Ridge Site Specific Advisory Board  
BP/ach

DATE



*Many Voices Working for the Community*

# Oak Ridge Site Specific Advisory Board

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## *2016 Annual Planning Meeting of the Oak Ridge Site Specific Advisory Board*

### **Unapproved August 6, 2016, Meeting Minutes**

The Oak Ridge Site Specific Advisory Board (ORSSAB) met for the 2016 Annual Planning Meeting at 9 a.m. on Saturday, August 6, 2016, at the Tremont Lodge & Resort, located at 7726 E. Lamar Alexander Parkway in Townsend, Tennessee.

The **objectives** of the meeting were to:

- Develop an increased understanding of and commitment to the goals of the board.
- Evaluate the effectiveness and achievements of the board in FY 2016.
- Begin development of the FY 2017 work plan.

The meeting was facilitated by Jenny Freeman, StrataG. A copy of the meeting agenda is included in Attachment 1.

### **Members Present**

Kathryn Bales  
Christopher Beatty  
Rosario Gonzalez  
David Hemelright  
Eddie Holden

Howard Holmes  
Greg Paulus  
Belinda Price  
Mary Smalling  
Fred Swindler

Venita Thomas  
Ed Trujillo  
Phil Yager  
Rudy Weigel

### **Members Absent**

Leon Baker  
Richard Burroughs  
Martha Deaderick  
Mike Ford  
Elizabeth Ross  
Deni Sobek  
Dennis Wilson

### **Liaisons, Deputy Designated Federal Officer, and Alternates Present**

Dave Adler, ORSSAB Alternate Deputy Designated Federal Officer (DDFO), Department of Energy, Oak Ridge Office of Environmental Management (DOE-OREM)  
Sue Cange, Manager for the Department of Energy's (DOE) Oak Ridge Office of Environmental Management (OREM) and ORSSAB DDFO  
Jeff Crane, Environmental Protection Agency (EPA) Region 4  
Kristof Czartoryski, Tennessee Department of Environment and Conservation (TDEC)  
Jenny Freeman, Meeting Facilitator, StrataG  
Melyssa Noe, ORSSAB Alternate Deputy Designated Federal Officer (DDFO), Department of Energy, Oak Ridge Office of Environmental Management (DOE-OREM)

### **Others Present**

Ashley Huff, ORSSAB Support Office  
Pete Osborne, ORSSAB Support Office

2 members of the public were present.

### **Welcome and Opening Remarks**

Ms. Price opened the meeting by welcoming new and returning board members and introducing DOE liaisons and regulators. She reviewed the board's mission statement and outlined the purpose of the 2016 Annual Planning Meeting as an opportunity for board members to learn about upcoming cleanup priorities from DOE and regulators as well as an occasion for the board to provide input to DOE on the development of ORSSAB's FY 2017 Work Plan. She encouraged all members to participate in the proceedings by asking questions and sharing ideas.

Ms. Cange briefly introduced the new members appointed to the board in July 2016. New members present at the 2016 Annual Planning Meeting were: Kathryn Bales, nuclear engineering student at the University of Tennessee, Knoxville; Christopher Beatty, quality assurance engineer with Innovative Design, Inc.; Rosario Gonzalez, cafeteria manager at St. Mary's Catholic Church in Oak Ridge; Eddie Holden, retired transportation and logistics manager, formerly of OREM; Fred Swindler, consultant for IsoRay Medical, Inc.; Venita Thomas, occupational safety and health specialist with Alliant Corp.; Rudy Weigel, retired industrial hygienist; Phil Yager, recently appointed Anderson county commissioner. A ninth new member, Deni Sobek, Oak Ridge High School teacher, was not present. Formal introductions for new board members and student representatives will take place at the September 14, 2016, ORSSAB monthly meeting.

Ms. Freeman reviewed the meeting objectives (listed above) and established three keys for success. Board members should: (1) listen, (2) learn, and (3) participate. Ms. Freeman alleviated any insecurities board members might have in engaging unfamiliar scientific and technical material. She advocated active participation as part of a "learning process" and encouraged new members to "wade into" the information being presented.

### **DDFO Comments**

Ms. Cange helped to orient new members to ORSSAB by providing a general introduction to the mission, vision, and goals of OREM's cleanup program in Oak Ridge.

Her presentation (Attachment 2) outlined three near-term visions:

- Vision 2016—The safe and successful demolition and removal of all five gaseous diffusion building at the East Tennessee Technology Park (ETTP). Vision 2016 is on schedule for completion in August 2016. A celebration is planned for August 30, 2016. Board members are invited to attend and should expect further details via email.
- Vision 2020—A goal to clean up the remaining portion of ETTP and reindustrialize the site.
- Vision 2024—An initiative to expand cleanup work to the Y-12 National Security Complex (Y-12) and address mercury contamination.

She also reviewed OREM's current near-term priorities:

- To complete cleanup of ETTP and proceed with reindustrialization, as well as meet historic preservation commitments at the site.
- To complete direct disposition of the U-233 material at Oak Ridge National Laboratory and begin the processing campaign.
- To complete contact- and remote-handled transuranic (TRU) debris processing.
- To construct and operate the TRU Sludge Test Facility.
- To complete planning for waste disposition and, if appropriate, preliminary design of a new Environmental Management Disposal Facility (EMDF).
- To continue design and complete construction of the Mercury Treatment Facility at Y-12.
- To continue implementation of the Groundwater Strategy.
- To reduce risk and stabilize contaminated facilities and maintain critical infrastructure.

*After the presentation, board members raised the following questions:*

Ms. Price asked about board participation in the upcoming celebration to commemorate the achievement of Vision 2016. Will board members be able to attend the event planned at the K-27 demolition site on August 30, 2016? Ms. Cange said that board members had already been invited and notified via email. Reminders will also be sent to the board. All of ORSSAB's members are welcome and encouraged to attend. ORSSAB staff will notify the board with further information via email.

Mr. Trujillo asked if DOE will truly "walk away" from the ETTP site at the end of 2020. Ms. Cange explained that some areas at the site will require DOE to provide security or continue inspections, but for the most part, cleanup will be done and land transfers will be finalized with the Community Reuse Organization of East Tennessee, or CROET, a non-profit which oversees commercial sale of the ETTP property. Ms. Cange added that there are ongoing groundwater actions at ETTP that could affect DOE's presence at the site, but those decisions cannot be made until ongoing studies are complete.

Mr. Weigel asked if ETTP will be categorized as a greenfield site or a brownfield site. Ms. Cange said that the ETTP site is categorized as a brownfield site and slated for restricted industrial use only.

### **Board Mission and Accomplishments**

Board Chair Belinda Price reviewed the board's mission statement and discussed the board's accomplishments for FY 2016 (Attachment 3).

The board:

- Submitted three recommendations to DOE.
- Submitted comments to DOE on the K-25 Virtual Museum.
- Approved two EM SSAB chairs recommendations as a result of collaboration among the eight site-specific advisory boards during annual conferences or "chairs meetings." (The eight site-specific advisory boards housed under DOE's EM program are collectively known as the Environmental Management Site-Specific Advisory Board and referred to as the EM SSAB).
- Hosted the 2016 EM SSAB Spring Chairs Meeting in Oak Ridge, which brought together representatives from DOE Headquarters (HQ) and from the eight local advisory boards around the nation.
- Participated in an EM SSAB chairs working group to address a number of charges for the chairs to focus on for the coming year. The first charge the group is taking on is developing a white paper for inclusion in the transition materials DOE prepares for the next administration. The document will highlight the EM SSAB and the priorities, issues, and perceived challenges of each individual advisory board.
- Took part in OREM's annual Community (Budget) Workshop. ORSSAB Secretary Dave Hemelright presented the board's recommendations on the FY 2018 OREM budget request.
- Represented ORSSAB at the 2016 Waste Management Symposium, in which Oak Ridge was selected as a feature site.
- Completed a number of public outreach goals.
- Attended a number of national meetings and conferences.
- Participated in a variety of special events and site tours.

### **Board Operations**

Prior to the meeting, board members were asked to respond to a survey about board operations (included in Attachment 1). Ms. Freeman provided summary points of the group's answers to each question.

## Results of 2016 Board Member Survey

1. *Did you like the changes made in the structure of your meeting schedule with shorter meetings, a dinner meeting, tours, etc.?*

Ms. Freeman reported that overall board members felt that the changes in meeting structure were effective. Some members advocated for more dinner meetings or other social opportunities.

2. *What kind of information do you need to make you comfortable with an issue?*

Ms. Freeman reported that adequate background knowledge and hands-on experience was critical. Board members reported that the biggest challenge for them was being able to participate in all three steps related to a given issue (i.e., the presentation, tour, and discussion).

3. *What steps should we put in place to ensure that each issue has a sufficient number of board members involved?*

Ms. Freeman reported that members supported the use of issue managers to take the initiative on key topics but emphasized the need to respect other members' time in scheduling additional commitments.

4. *What is the one thing that would encourage you to become involved in one or two issue groups?*

Ms. Freeman reported that the issues themselves were the greatest factor in board member engagement.

5. *What would you like for the board to do to make your participation more active and engaged?*

Ms. Freeman reported that members showed particular interest in issues with strong community relevance and expressed the desire to demonstrate the value of those issues within the community through some form of public outreach.

### *Additional Comments:*

Mr. Adler stressed the implementation of a new sequence for meetings (from formal presentation, to site tour, to follow-on committee discussion) as being tremendously beneficial to the board.

Mr. Paulus said the inclusion of site tours has been invaluable to increasing knowledge and raising awareness of key issues. He encourage new board members to participate in these activities in the upcoming year.

Ms. Price encouraged board members to take an active role as issue managers for at least two topics on the work plan. She said the goal in utilizing issue managers was essentially to have a leader or group of leaders who would cover all (3) aspects of a given topic, including the board presentation, tour, and follow-on committee discussion, and ultimately lead the effort on drafting a recommendation on the issue.

Mr. Trujillo stressed the importance of board recommendations and encouraged new members to become involved in the process early. He explained that working in groups helped alleviate concerns over the complexity of material being considered. He also noted that teleconferencing for small group discussions has worked well in the past and could be utilized to aid in the recommendation process in the future.

Ms. Cange emphasized the role of ORSSAB's subcommittee, the EM & Stewardship Committee, as an avenue for more in-depth discussion on work plan topics.

## **Work Plan Topics and Discussion**

### **Ms. Noe reported—**

Each year the annual meeting provides an opportunity for DOE and regulators to discuss possible topics for the upcoming fiscal year and for ORSSAB to make suggestions for DOE to consider in developing a

work plan. Following the meeting, DOE will develop the board's FY 2017 Work Plan, or schedule of meetings, based on all of the input provided. (See the Flowchart in Attachment 1). The list of topics for FY 2017 should be available prior to the September 14, 2016, board meeting. The goal is for a work plan to be signed into effect, by both Sue Cange and ORSSAB's chair, by the start of the fiscal year in October.

### **DOE Topics**

Mr. Adler presented DOE's suggested topics (Attachment 4).

DOE's FY 2017 topics for ORSSAB to consider are:

- Input on reuse and historic preservation activities at ETTP.
- Participation in ongoing efforts to assure sufficient waste disposal capacity.
- Participation in efforts to address excess contaminated facilities.
- Evaluation of ongoing groundwater efforts.
- Maintain ORSSAB awareness on key material disposition activities.
- Provision of input into the FY 2019 budget development.

Mr. Hemelright asked about U-233 disposition and the timeline for completion. Ms. Cange said that direct dispositioning would be completed in 2017. Some of the material needs to be downblended before it can be shipped, and the schedule for that initiative depends on congressional funding. A reasonable estimate would be an early 2020 completion for the downblending campaign.

Mr. Yager asked about plans for an airport at the ETTP site. If that plan proceeds, would it affect demolition work? Mr. Adler said if the airport is built, several buildings will be under the footprint, and roadways will need rerouting. Significant changes to the site would be required.

Mr. Trujillo asked if CROET had ever made a presentation to the board. Mr. Adler said that he meets regularly with CROET and would try to determine if they would be agreeable to addressing the board. He suggested the organization might prefer an informal discussion over a presentation.

### **TDEC Topics**

Mr. Czartoryski provided TDEC's suggested topics (Attachment 5):

TDEC recommended the following areas where ORSSAB's comments and recommendations would be beneficial:

- Sufficient disposal capacity for future Comprehensive Environmental Response, Compensation and Liability Act-generated waste (commonly known as CERCLA waste)—Mr. Czartoryski suggested ORSSAB might address the potential location of a new onsite facility, volume reduction technologies, and additional offsite and onsite disposal options (slides 3-6).
- Processing and disposition of TRU waste—Mr. Czartoryski addressed Trench 13 as well as plans for the TRU Sludge Processing Facility (slides 7-8).
- Assessments of Groundwater—Mr. Czartoryski supported modeling activities and DOE's efforts to construct a regional groundwater flow model. He advocated for greater implementation of groundwater remedies following several treatability studies (slides 9-12).
- Mercury Remediation—Mr. Czartoryski addressed releases of mercury from Y-12 and plans for the Mercury Treatment Facility at Y-12 (slides 13-14).



*After the presentation, board members raised the following questions:*

Ms. Thomas asked about the board's relationship to the Federal Facility Agreement (FFA).

Mr. Czartoryski explained that all board involvement on Oak Ridge cleanup was a provision of the FFA.

Ms. Cange clarified that the board provides input to DOE rather than the operation of the FFA. The board does not direct regulator involvement or agency interactions, for example.

Mr. Yager asked for more information on volume reduction at the existing onsite disposal facility, known as the Environmental Management Disposal Facility (EMWMF). Is EMWMF being filled efficiently?

Ms. Cange acknowledged that there have been some concerns in the past from regulators and the Inspector General as to efficiency, such as on the use of "clean fill" rather than contaminated soils. She stated that significant improvements have been made in the last five years by DOE's current contractor. EMWMF is being managed more efficiently and other facilities are being better utilized than previously. Mr. Czartoryski supported Ms. Cange's comments and acknowledged the improvements over the last five years.

Ms. Price asked about the mention of an ongoing treatability study. Could this be a topic for the board to consider? Ms. Cange said a significant study will occur at ETTP to help with future decisions on groundwater at the site. The board would be informed on the progress of that study.

Ms. Price also asked if the Mercury Treatment Facility planned for Y-12 would be in place and operational before any demolition work begins on Y-12's excess facilities. Ms. Cange said that, yes, that is the plan. DOE wanted to address potential excess mercury releases that could occur during demolition, so the water treatment facility will be completed prior to major demolition activity.

Mr. Beatty asked about the working relationship between DOE, EPA, and TDEC. Do the agencies work together to decide milestones and determine priorities? Ms. Cange explained that DOE is responsible for performing the cleanup work, but EPA and TDEC are DOE's regulators. There are different kinds of agreements in place with each agency. An FFA agreement establishes milestones and directs cleanup work. There are some additional (non-FFA) agreements in place with the State of Tennessee related to the removal of certain kinds of waste in storage on the Oak Ridge Reservation.

### **EPA Topics**

Mr. Crane discussed EPA's topics (Attachment 6).

EPA recommended the following areas for ORSSAB to address in FY 2017:

- DOE Oak Ridge Reservation (ORR) Near Term Groundwater Projects—Mr. Crane mentioned treatability studies the board might be interested in reviewing (see slides 3-5).
- DOE ORR Groundwater Strategy—Mr. Crane addressed cleanup milestones for groundwater, key policies on groundwater restoration, and the need for further characterization and cleanup decisions on 35 identified plumes (slides 6-9).
- DOE ORR Intermediate Term Project Planning—Mr. Crane provided additional information on soil and groundwater remediation efforts and advised the board to review existing information on groundwater plumes (slides 10-17).
- Effective DOE ORR Community Outreach Activities—Mr. Crane stressed the need for DOE's active involvement with the community and continued provision of project-specific community outreach plans, like the one created for EMDF (slide 18).

*After the presentation, board members raised the following questions:*

Mr. Yager asked for an explanation of the term “plume.” Mr. Crane explained that plumes are dissolved contamination in groundwater that is above the level established for safe drinking water.

Mr. Trujillo asked about the mention of DNAPLs or “dense non-aqueous phase liquids,” a term for contaminants that are denser than water and do not dissolve in water. Is there a treatability study for that? Mr. Crane said that is what the treatability study for ETTP will address. Mr. Trujillo asked if the board could be briefed on the assessment. Mr. Adler said the board could have a briefing.

*At the conclusion of the presentations, the meeting facilitator invited board member suggestions on additional FY 2017 topics:*

Ms. Price requested a presentation on FFA Appendices E and J to better understand cleanup priorities and scheduling. Ms. Cange suggested a presentation on how baseline planning will sync with the FFA milestones. Ms. Price said that would be beneficial.

Mr. Paulus asked about flexibility in the work plan. Can the board continue to request alterations after the work plan is developed? Ms. Cange explained that the work plan is a living document and can sometimes change or be rearranged. Occasionally, the schedule gets rearranged based on speaker availability, for example. However, the work plan is developed for the entire year and reflects topics important to DOE and relevant to the current work scope. Since the number of monthly presentations is set, new topics would require an existing topic to be removed, so drastic changes to the work plan are unlikely. Supplemental information could be added to a committee meeting, however.

### **Implementation of Work Plan**

#### **Ms. Noe reported—**

Ms. Noe reviewed ORSSAB’s process for implementing its work plan (for reference, see the 2016 Work Plan in Attachment 1). Prior to the board meetings each month, the Executive Committee meets to review the work plan topic and discuss board business. On the second Wednesday of each month, ORSSAB holds a formal board meeting, which typically includes a presentation on the work plan topic to provide a general background and introduction for the board. Afterwards, a site tour is arranged to give board members “hands-on” experience with the issue. Following the site tour, the board’s EM & Stewardship Committee meets, generally on the fourth Wednesday of the month, for more in-depth discussion. The committee meetings (and issue managers) help guide the board in the process of making recommendations.

She also noted additional opportunities for supplemental training. In the past, board members expressed interest in a presentation on the Federal Advisory Committee Act, or FACA, which governs all of DOE’s site-specific advisory boards across the nation. HQ is currently updating the FACA materials, and an HQ-led training session could be arranged if the board would like one. Another option would be an informational session on the FFA and its appendices and milestones.

If the board is interested in supplemental training opportunities, staff will need to be notified so that arrangements can be made. Once the FY 2017 Work Plan has been established, a sign-up sheet with options for issue managers and supplemental training will be distributed. Board members are encouraged to sign-up for issues and list preferences for training at that time.

**Board Business**

Mr. Osborne (standing in for Ms. Smalling) presented a slate of candidates for board officers for FY 2017. The nominations are as follows:

Chair: Belinda Price

Vice Chair: Dennis Wilson

Secretary: Dave Hemelright.

A formal vote will take place at the September 14, 2016, meeting.

**Public Comment**

None.

**Closing Remarks**

Ms. Price thanked everyone for participating and contributing to a successful planning meeting. She hoped the board's new members gained insights into the board's proceedings and looked forward to working with everyone throughout the upcoming year.

Ms. Cange added her thanks to the group for participating. She reiterated the board's importance to DOE. Continued efforts have been made to improve the board over the years, and she hoped to continue a vibrant and mutually beneficial relationship with ORSSAB in the future.

The meeting adjourned at 12:31 p.m.

Attachments (6) to these minutes are available on request from the ORSSAB support office.

I certify that these minutes are an accurate account of the August 6, 2016, meeting of the Oak Ridge Site Specific Advisory Board.

Dave Hemelright, Secretary

Belinda Price, Chair  
Oak Ridge Site Specific Advisory Board  
BP/ach

DATE



# Oak Ridge Site Specific Advisory Board

Nominating Committee Proposed Slate of Candidates  
for  
FY 2017 Board Officers

\*\*\*

Chair—*Belinda Price*

Vice Chair—*Dennis Wilson*

Secretary—*Dave Hemelright*

# REPORTS & MEMOS

## EM Project Update

ETTP	July	August
Zone 1 Final Soils ROD		Comments were received from EPA on the D1 ROD. TDEC requested an additional 30 days to comment.
Zone 2 Soil ROD	The Remedial Design Report/Remedial Action Work Plan for Zone 2 Soils, Slabs, and Subsurface Structures was approved.	The PCCR for EU 6 was submitted to the regulators for review.
	The K-33 Slabs and Soils PCCR for EUs 4 & 5 was approved by the regulators.	An Explanation of Significant Differences to the Zone 2 ROD to address the management of water was prepared.
Sitewide ROD	The Addendum to the Characterization Work Plan for Design Characterization Activities for the Sitewide Groundwater Treatability Study was submitted to the regulators.	
K-25/K-27 D&D	The K-27 Building demolition is 91 percent complete. A total of 7,044 shipments of building debris went to EMWMF, which is 78 percent of estimated required shipments.	The K-27 Building demolition was completed with a number of people on hand to witness the last wall fall. A total of 8,615 shipments of building debris went to EMWMF, which is 96 percent of estimated required shipments.
	A total of 333 convertors (94 percent) have been shipped to the Nevada National Security Site for disposal.	A total of 386 out of an estimated 580 boxes containing Technetium-bearing pipe have been shipped offsite for disposal.
K-732 Switchyard Demolition	Completed the collection of field samples for the characterization work.	
Remaining Facilities	The Remaining Facilities Addendum was submitted to the regulators for review.	The Waste Handling Plan Addendum for the Central Neutralization Facility was approved by the regulators.
	The Waste Handling Plan Addendum for the Central Neutralization Facility was submitted to the regulators for review.	The FY 2015 Low Risk/Low Complexity PCCR was approved by the regulators.
ORNL	July	August
U-233 Disposition	Submitted a Multifactor Authentication Implementation Plan to DOE for review and approval.	
	The newly installed diesel generator was turned over to Operations. Building 3019 roof replacement continues, with approximately 85 percent of the reroofing activities complete.	
Y-12	July	August
Outfall 200 Mercury Treatment Facility	DOE Headquarters led a Preliminary Design Review. The review team concluded that the contractor should achieve 90 percent design completion by the fourth quarter of FY 2018. Additionally, the review noted that the facility will work as designed.	Work continued on the Final Design of the Outfall 200 Mercury Treatment Facility.
Y-12 Facilities D&D		The Removal Action Work Plan Addendum for the removal of Colex equipment was submitted to the regulators for review.
		A Completion Letter for the Building 9808 Demolition was submitted to the regulators stating project completion.
		The Biology Complex Demolition WHP was submitted to the regulators for review.

## EM Project Update

Off-Site Cleanup/Waste Management	July	August
TRU Waste Processing Center	The site had visits from the Carlsbad Field Office and the Defense Nuclear Facilities Safety Board, which resulted in no issues.	The project processed more than 100 percent of the remote-handled TRU waste goal for the business month.
EMWMF and EMDF	An overview of the alternatives was presented to the public in an ETEBA-sponsored event.	
WRRP	The FY 2015 Remediation Effectiveness Report was approved by the regulators.	Held a meeting with the regulators to discuss draft responses to comments on the FY 2016 Remediation Effectiveness Report.
ORR Groundwater Strategy		Development of a regional groundwater flow model and preparation for a September 2016 meeting of the Technical Advisory Group continued.
Reindustrialization		The final Covenant Deferral Request (CDR) for the Former Powerhouse, Duct Island, and P1 Pond Area was submitted to the regulators for approval. This addresses 652 acres at ETTP proposed for transfer to support economic development.

### Abbreviations for EM Project Update

D&D – decontamination and decommissioning  
 DOE – Department of Energy  
 EMDF – Environmental Management Disposal Facility  
 EMWMF – Environmental Management Waste Management Facility  
 EPA – Environmental Protection Agency  
 ETEBA – Energy Technology and Environmental Business Association  
 ETTP – East Tennessee Technology Park  
 EU – exposure unit  
 ORR – Oak Ridge Reservation  
 PCCR – Phased Construction Completion Report  
 ROD – Record of Decision  
 TDEC – Tennessee Department of Environment and Conservation  
 TRU – transuranic  
 WHP – Waste Handling Plan  
 WRRP – Water Resources Restoration Program  
 Y-12 – Y-12 National Security Complex

## Travel Opportunities

Meeting/Event	Dates	Location	Reg. Cost	Website	Conference Lock Date; # Allocated Attendees	Deadline to Submit Requests
FY 2017						
<b>Perma-Fix Nuclear Waste Management Forum</b>	Meeting canceled	Nashville				
<b>Intergovernmental Meeting with DOE</b> (Pending requests: ___)	TBD	New Orleans	none		N/A	
<b>Waste Management Symposium</b> (Pending requests: _____)	March 5-9, 2017	Phoenix	TBD	<a href="http://www.wmsym.org">www.wmsym.org</a>	TBD	
<b>National Environmental Justice Conference &amp; Training</b> (Pending requests: _____)	March 8-10, 2017	Washington, D.C.	none	<a href="http://thenejc.org">http://thenejc.org</a>	N/A	
<b>2017 Spring Chairs Meeting</b> (Pending requests: ___)	TBD	TBD	none		N/A	
<b>RadWaste Summit</b> (Pending requests: ___)	TBD	Summerlin, Nevada	TBD	<a href="http://www.exchangemonitor.com/forums/annual-radwaste-summit/">http://www.exchangemonitor.com/forums/annual-radwaste-summit/</a>	TBD	
<b>DOE National Cleanup Workshop</b> (Pending requests: _____)	TBD	TBD	none		TBD	
<b>2017 Fall Chairs Meeting</b> (Pending requests: _____)	TBD	TBD	none		N/A	
<b>EPA National Brownfields Conference</b> (Pending requests: _____)	December 5-7, 2017	Pittsburgh	TBD	<a href="https://www.epa.gov/brownfields/2017-national-brownfields-training-conference">https://www.epa.gov/brownfields/2017-national-brownfields-training-conference</a>	N/A	

Shaded trips are closed