

Advocate

A publication of the Oak Ridge Site Specific Advisory Board – a federally appointed citizens panel providing independent recommendations and advice to DOE’s Environmental Management Program

Multi-Year Focus on Excess Contaminated Facilities Reaps Results as OREM Uses Funds to Ensure Safety of Y-12 and ORNL, Plan for Future Efforts

The U.S. Department of Energy (DOE) has more than 1,600 excess contaminated facilities across the DOE Complex. Nearly 300 of those are at sites on the Oak Ridge Reservation (ORR). Sixty of the excess facilities in Oak Ridge are also classified as high risk as a result of their previous use in the Manhattan Project and later scientific research – more than at any other DOE site. Cleanup of these sites came under increased scrutiny in 2015 after an audit by the Government Accountability Office (GAO) noted the increasing liability costs of these facilities as well as risks posed to human health and the environment. The Alpha 5 Building at Y-12 National Security Complex (Y-12) was identified as one of the highest risk facilities.

In response to the audit, DOE created the Excess Contaminated Facilities Working Group to address issues raised in the audit, gather data and report progress on the removal of these facilities. Congress responded by providing additional funds to reduce risk at these facilities. Oak Ridge received \$45 million dollars in FY17 – a significant increase from the \$28 million received in FY16. OREM and cleanup contractor URS|CH2M Oak Ridge (UCOR) have used those funds to reduce risk at Y-12 and Oak Ridge National Laboratory (ORNL).

Ownership of the facilities is part of the cleanup challenge. While some are owned by OREM, others are still property of DOE’s Office of Science and the National Nuclear Security Administration and exist in the midst of ongoing critical missions. Due to the varied ownership, OREM works



ORSSAB members visited ORNL’s Building 3028 during a tour of OREM’s excess contaminated facilities. Attending were Rosario Gonzalez, Bill McMillan (DOE), Belinda Price, Fred Swindler, Shell Lohmann, Bonnie Shoemaker, Leon Shields and Clint Mori (UCOR).

closely with the other local DOE organizations when prioritizing excess facility projects.

FY17 Work Scope at ORNL

Building 3026 — OREM’s work has downgraded the facility from a Hazard Category 3 nuclear facility to a radiological facility. However, two highly contaminated hot cells remain. The building is now in surveillance and maintenance (S&M) mode, including the occasional need to pump out water that leaks into the building.

Buildings 3028 & 3029 — These two facilities still contain hot cells with residual contamination. Fogging of the

cells to immobilize contamination was completed in January and samples taken afterward show that it was successful in

(See Facilities on page 6)

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Reservation Update

Teardown of ETTP Wastewater Treatment Facilities Underway

URS|CH2M Oak Ridge (UCOR) has begun dismantling piping at ETTP's Central Neutralization Facility as part of the broader plan to demolish the entire site. The facility was built in the 1980s to treat wastewater from operations at the former uranium enrichment complex.

It was closed in 2013 and replaced with a new facility, the Chromium Waste Treatment System. Removing the unused infrastructure will improve the site as part of OREM's goal of turning it into a business and industrial asset for the community. Work is expected to finish this spring.



Equipment dismantles piping at the Central Neutralization Facility.

\$5.3M in Contracts Awarded to Start Work on History Center

The DOE, through its contractor UCOR, has awarded three subcontracts worth \$5.3 million to two firms to begin work on the K-25 History Center. North Wind Construction Services of Knoxville was awarded two subcontracts for building construction and site improvements. Formations, Inc. of Portland, Ore. received a contract to create and install exhibits.

The history center, which is scheduled to open next year, will

include a theater and interactive galleries that display equipment, artifacts, and other media to highlight the site's workers and numerous Manhattan Project and Cold War-era accomplishments.

Study of East Fork Poplar Creek Could Help Mercury Cleanup

Analyses of creek algae in East Fork Poplar Creek have informed a new model that can more accurately predict the presence of the neurotoxin methylmercury in small headwater ecosystems. For about two years, Oak Ridge National Laboratory scientists studied biofilms collected during different seasons and from various locations along the creek bed and discovered methylmercury in tiny oxygen-deficient pockets within the biofilms' complex ecosystem.

The team also found that simply shaking the samples

disrupted the biofilms' delicate ecosystem and reduced methylmercury levels. Their newly developed model, described in *Environmental Science & Technology*, could be applied to other water systems to predict methylmercury production.

Soil Remediation a Growing Focus of Cleanup at ETTP

OREM and UCOR are surveying and analyzing soil at East Tennessee Technology Park (ETTP) as more buildings are removed. Teams sample the soil at varying depths and locations to determine where contamination exists from previous operations. Contaminated soil is excavated and replaced with clean fill to return the sites to grassy fields.

Workers recently remediated areas near the former K-25 Building and Poplar Creek and are also working with soils on the actual footprint of K-25. A major upcoming effort involves sampling the footprint of the K-29 Building, one of the five former gaseous diffusion uranium enrichment buildings at ETTP. So far, OREM has remediated about 200,000 cubic yards, or 16,000 truckloads, of soil at the site.



Algae biofilms accumulated on glass washers affixed to a plastic pegboard submerged in East Fork Poplar Creek. ORNL researchers analyzed the samples to determine the production of methylmercury.

New Social Media Outreach Efforts Pay Off During Membership Drive

Recently, ORSSAB staff have made a point to increase the board's presence on digital platforms, including updating its website and being more active on social media like Facebook.

While these efforts have netted good results, they were particularly useful during the membership drive, which started just after Christmas and finished at the end of January.


Each year recruitment for board vacancies is advertised in area newspapers — *The Oak Ridger*, *The Loudon County News-Herald*, *The Roane County News*, and the *Knoxville News Sentinel* and its sister paper *The Shopper News* — as well as public spaces like the Oak Ridge Chamber, the American Museum of Science and Energy, and area libraries. During the most recent recruitment period, board staff also included a small budget for Facebook ads for the first time. In about a month, the Facebook ads were seen by nearly 15,000 people in ORSSAB's multi-county target area.

For the next term, the board will need to fill the two current vacancies as well as the seats of three members who



Historical images of cleanup efforts like this one were particularly popular in Facebook ads.

will retire at the end of June.

Local DOE leaders selected from the many outstanding applications, and sent a final slate of potential members to DOE headquarters for approval. All applicants were notified regarding the status of their application. Those not appointed will form a pool of candidates from which appointments can be made in the future as vacancies on the board arise. 

By the Numbers

- 15,000 — Number of people who saw recruitment ads on Facebook.
- 5 — Vacancies on the board
- 40 — Percent of new applications who mentioned Facebook ads.
- 29 — Total nominations considered from current and previous years

Annual Publications Detail Successes, Progress Achieved in 2017


Organizations involved in cleanup on the ORR have released several publications detailing their efforts for the past year.

Cleanup Progress is OREM's annual report to the community on the ORR cleanup effort. Find it at energy.gov/orem/about-us/news/cleanup-progress-reports. It is produced by UCOR, OREM's main cleanup contractor, which also has its company *FY2017 Annual Report* at www.ucor.com/companyinfo.html.

The ORSSAB *2017 Annual Report* offers an overview of board activities for the year, from tours to topics heard and recommendations written. Find it at energy.gov/orssab.



DOE EM headquarters published its *2017 Year in Review*, outlining cleanup achievements across the DOE complex with sections for each site. Read it at [\[energy-office-environmental-management-2017-year-review\]\(http://energy-office-environmental-management-2017-year-review\).](http://energy.gov/em/downloads/departmen-</p></div><div data-bbox=)

Prefer physical copies? Visit the DOE Information Center at 1 Science.gov Way, Oak Ridge, TN 37831. 

Meet the Chair: In Second Board Term, Dennis Wilson Takes the Lead

Dennis Wilson was neither a native of East Tennessee nor involved in DOE work when he and his wife, Jolene, moved south in 2012. However, a second move in 2014 to his current home in Rockwood ensured that he would become very interested in OREM’s cleanup operations. His new neighbor turned out to be Greg Paulus, who then served on the Oak Ridge Site Specific Advisory Board.

“He started talking to me about (ORSSAB) and invited me to stop in at a few meetings,” said Wilson. “And I attended every meeting after that and applied for membership in January. I was convinced pretty quick this was something I was interested in.”

Dennis knew he could contribute to the board and was excited to give back in a way that could affect the environmental health of his newly adopted home. His science background helped him with some of the technical hurdles that most new members face. He retired in 2009 as director of technology and intellectual property at JohnsonDiversey (now Sealed Air) and his early career included work as a resin and polymer chemist. Many of the technologies he dealt with were focused on a reduced environmental footprint compared to older products.

Still, the sheer amount of information was like “drinking from a firehose,” he said. But, living right on the river as he does, he was determined to understand how DOE operations and cleanup would affect this area. It’s something he’s still passionate about for many reasons, not the least of which is that his two sons and seven grandchildren have since moved to nearby areas.

Senior members of the board were the biggest help with the learning curve, Wilson said. During his time on the board, Wilson has absorbed information about Oak Ridge’s history and credits the less formal atmosphere of the EM & Stewardship meetings




Above: Dennis Wilson pitched in during the new member tour in 2015 and has continued to increase his involvement in the board ever since. Left: He attended his first national meeting as chair last year.

with letting him expand his knowledge the most. Dennis now enjoys engaging on groundwater, budget and excess facilities topics.

As chair, he looks forward to building on board process improvements by past leadership to further ease the new member transition and personalize the learning curve so members can quickly make a difference with topics they are passionate about.

“Getting involved without being overwhelmed is a key element,” he said. “The board needs to be a learning organization where everyone can quickly grasp the meat of a topic that interests them and contribute.”

In the near term, he said, he hopes the board contributes whatever it can to DOE’s efforts for waste disposal – buttoning up the sites that are currently in use and ensuring that the resources are available to fully handle any future waste from the necessary clean up efforts at ORNL and Y-12. Looking further in the future, he sees groundwater issues as the most complex but critical issue the board will have to address.

“With the current mix of members from former DOE employees who know these buildings, to geologists and area history experts we have what is needed to successfully tackle these issues,” he said. 

Board Says Goodbye: Long-Time Staff Member Pete Osborne Departs

Pete Osborne attended his last meeting with the SSAB as its senior staff member in February. It was the culmination of a 20-year career with the board.

During that time, he helped steer the board through its turbulent early years as processes were developed to streamline operations.

“There are phases an advisory committee goes through,” he explained, “as the group tries to get a handle on what needs to be done, how the work is going to get done, and how to get people involved to get the job



Pete Osborne leads new member training in 2005.

done. At first the board was all over the waterfront, really trying to do too much. Through the years it's become a smoothly functioning organization,

and I'm proud to have played a role in that.”

“I've always appreciated the time and effort the SSAB members put into their participation on the board. I have great respect for people who volunteer their time to better their community. It's been an inspiration to me, and I've been gratified to have had a career working with people who believe in community service. There have been so many great people on this board. I would like to thank them all.”

(See Osborne on page 7)

And Two Student Representatives Rotate off the Board

Each year ORSSAB seats two student representatives from area high schools to engage the perspectives of local students on environmental issues. One is from Oak Ridge High School, and the other is from Hardin Valley Academy in West Knoxville.

The board continues this long-standing tradition as part of its interest in long term stewardship of the ORR — exposing students to the work done by OREM ensures the next crop of stewards are prepared for their role in making sure cleanup is completed and stewardship of the site continues for as long as is needed.

This year Cameron Niemeyer and Chloe Nussbaum were selected to serve on the board by their schools for a one-year term. Their terms on the board end in April and both will graduate in May with plans to attend college.

Cameron, a senior at Hardin Valley Academy is considering attending the University of South Carolina or the University of Tennessee in the fall.

“Being on the board taught me a lot

how it's evolved over the years, is very interesting. I'm glad to know that citizens are given a voice on the national scale to help influence how their town is changed and impacted.”

Chloe will play soccer at Johnson University and plans to study psychology and intercultural studies. She hopes to become a counselor for refugees in the Middle East.

“I enjoyed learning about our community and all that goes on behind the scenes to make sure Oak Ridge maintains its historical importance yet stays up-to-date, including cleaning up the DOE sites,” she said.

“I put my full trust into the leadership and oversight of a positive environmental future

for generations to come because of ORSSAB.”

Chloe plans on staying up-to-date on international affairs concerning DOE in order to stay connected in relation to her work field and the SSAB. 🌱



Cameron Niemeyer



Chloe Nussbaum

about how the Oak Ridge Reservation is cleaned up,” he said. “I loved getting exposed to it, as this is a very important local area that I've lived in my entire life. Getting to know what goes on in the decision making process, and

SSAB Members Will Tour WIPP as Part of Next Chair's Meeting




ORSSAB members were last able to tour WIPP in 2012.

The annual Spring Chair's Meeting brings the leadership of all eight SSABs around the country together to share best practices, understand how issues at other DOE properties interconnect with those in Oak Ridge. DOE headquarters personnel will give updates to attendees on the EM program, its budget and planning process, waste disposition, and efforts toward regulatory reform.

The meeting also offers the opportunity for SSABs to craft joint recommendations on important topics affecting

areas where DOE operates.

This year's event will be May 2-3 in Roswell, N.M. Part of the choice of venue was related to the reopening of the Waste Isolation Pilot Plant (WIPP) in 2017. It was a major milestone for cleanup efforts across the country and generated significant interest among the SSABs — particularly those like Oak Ridge that have been able to resume shipping waste to the plant. WIPP was also the focus of a joint chairs recommendation in 2017. As part of the multi-day event, attendees will get a tour of the facility. The SSAB members have also been invited to meet with the Mayor's Task Force in Carlsbad. 

Facilities

(Continued from page 1)

reducing radiation contamination risks.

Building 3517 — A Hazard Category 2 nuclear facility that contains radioactive and hazardous materials and is awaiting deactivation and decontamination (D&D). Workers in December replaced the ventilation system's aging HEPA filters to reduce the potential for contaminants to leave the building.

Building 7500 — By the end of FY17, workers had surpassed the halfway mark removing asbestos from a former research reactor, also known as the Homogenous Reactor Experiment facility. Abatement was finished in early 2018. Crews removed ceiling and floor tile, pipe and vessel insulation, and wall board. UCOR cleared all combustible materials and deactivated the heat detection system inside the building earlier in 2017, which eliminated the need for personnel to enter the building for periodic inspections, and allowed for removal of all hazardous energy sources.

Building 7503 — Also known as the Molten Salt Reactor Experiment (MSRE), this facility is in S&M mode until final disposition can be

determined. Operations include monitoring material in the remaining fuel salt and drain tanks that generates a dangerous hydrofluoric acid gas. It is pumped out regularly to maintain safe pressure levels. OREM performed an engineering evaluation for the building to determine associated risks and how to reduce them. Results from that and other analyses are informing plans for FY18, including upgrades to the electrical and ventilation systems.


FY17 Work Scope at Y-12

Alpha 4 — The building was constructed in 1945 for uranium enrichment activities, but was later used for lithium separation and weapons development. These activities required massive amounts of mercury, leading to extensive contamination OREM must now address. Current activities are focused on the column exchange (COLEX) equipment that supplied mercury for the building's operations. Workers retrieved more than 4,000 pounds of mercury from about 8,000 feet of pipes and equipment on the building's west side. Those activities are expected to be completed and the COLEX equipment to be demolished this year. The project will then begin similar work on the east and south sides



Workers at Y-12 have removed several tons of mercury from equipment at Alpha 4. The drum shown is designed to hold 1,000 pounds of the element.

of the facility.

Biology Complex — Initially used for uranium recovery/salvage operations, the complex is most well-known as the home of ORNL Biology Division research. Hazard investigation and characterization necessary for future demolition have been completed. Two smaller buildings, 9743-2 and 9770-2, were demolished last month. 

Osborne

(Continued from page 5)

"I'm particularly proud of the work the board has done on long-term stewardship. This board spearheaded the drive to get DOE to address the issue, and it's something that will have a lasting impact, not just here in Oak Ridge but across the DOE complex. I'm also proud of the work the board did on public outreach. In the past 20 years we did almost 200 briefings, presentations, and other events, and established the Oak Ridge SSAB as the gold standard for outreach in the complex."

"I also have to say how much I've enjoyed working with the DOE personnel who've been associated with the SSAB through the years. They have rules, regulations, and policies to follow that sometimes makes it seem like they're not always on the same page with what the public wants, but at heart they too are members of the community who have a genuine interest in making sure the public and the environment are protected."

Pete started out in Oak Ridge as a technical writer for the EM program,

working on the enormous five- and six-volume remedial investigation/feasibility study reports for Bear Creek Valley and Melton Valley. He began working with the SSAB part time in 1998 and then full time a year later.


In his spare time he focused on his three passions: home improvement, travel, and volunteer work.

He has served as a tutor with the Knox County Adult Literacy Program and has worked on numerous Habitat for Humanity homes. He has volunteered with the Hope Center at Covenant Health for nearly 15 years and recently began volunteering with the Knox County Office on Aging's Connecting Hearts Program.

Pete and his partner Charles have been together for 42 years and were married four years ago. They have



Pete spread awareness of the SSAB through many outreach activities, such as this 1999 conference.

traveled extensively in the U.S. and have visited 15 countries, some of them several times, including Mexico, Germany, Honduras, and Costa Rica. In addition to traveling even more, Pete plans to devote his time to his home renovation and rental business. 

FY 2018 ORSSAB Workplan Topics

Board recommendations are based on topics presented by DOE at the board's monthly meetings.

The board meets the second Wednesday of most months. In-depth discussion follows in the EM & Stewardship Committee meeting on the fourth Wednesday.

April

Ongoing Efforts to Assure Waste Disposal Capacity

May

No meeting due to DOE Community Budget Workshop

June

Ongoing Groundwater Efforts

July

No meeting due to new member training/tours

August

No meetings due to ORSSAB Annual Planning Meeting

September

Vision 2020: Planning for the Future of ETTP Including Reuse, Historic Preservation and Stewardship



Join Us for an Update on Ongoing Efforts to Assure Waste Disposal Capacity

6 p.m. Wednesday, April 11

DOE Information Center
1 Science.gov Way
Oak Ridge, TN 37831

As OREM transitions its cleanup mission to ORNL and ETTP, it is crucial that room for debris and other waste from demolition work is available locally.

A new facility, the EMDF has been proposed. DOE representatives will share how that project is coming along and its effects on future cleanup.

Questions? Call the ORSSAB office at (865) 241-4583 or (865) 241-4584.

DOE Awards Contract for Soil Sampling at Potential EMDF Site

Knoxville-based Strata-G LLC will conduct environmental sampling at a site in Bear Creek Valley to determine its suitability to house the proposed new Environmental Management Disposal Facility.


Strata-G received the contract, valued at \$1 million, in February from DOE. The company will drill 16 wells to access groundwater, characterize surface water, and gather soil samples for geotechnical investigations. Fieldwork is scheduled for completion in April, and a final report on the effort will be released later this year. A new disposal facility is needed to replace the current facility, which is almost full, and allow OREM's cleanup work to transition to Y-12 and ORNL.

OREM identified the site, which is located on the ORR west of Y-12, as a preferred site based on its previous research in the general area. The new sampling will provide more specific information related to the potential disposal site, determine its ultimate suitability for future waste disposal operations and support detailed design planning.

OREM, in partnership with TDEC



Workers sample soil on the Oak Ridge Reservation.

and EPA, plans to release a formal proposal for EMDF later this year. It expects to offer multiple opportunities for public comment on the plan. 



CROET – Community Reuse Organization of East Tennessee
DOE – Department of Energy
EM – Environmental Management
ETTP – East Tennessee Technology Park
OREM – Oak Ridge Environmental Management
ORNL – Oak Ridge National Laboratory
ORR – Oak Ridge Reservation
ORSSAB – Oak Ridge Site Specific Advisory Board
TRU – Transuranic Waste
UCOR – URS | CH2M Oak Ridge
WIPP – Waste Isolation Pilot Plant
Y-12 – Y-12 National Security Complex

ABBREVIATIONS

Meetings are held at 6 p.m. in the DOE Information Center, 1 Science.gov Way, Oak Ridge, TN, unless noted otherwise.
ORSSAB Board: Wednesday, April 11
EM & Stewardship Committee: Wednesday, April 25

UPCOMING MEETINGS

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Oak Ridge Site Specific Advisory Board

