

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

New Waste Disposal Facility Needed to Allow Cleanup Program Move to ORNL, Y-12 in 2020s

The U.S. Department of Energy (DOE) Oak Ridge Office of Environmental Management (OREM) has made tremendous progress on the cleanup mission at East Tennessee Technology Park (ETTP) and estimates completion in 2020. But with that success comes a new challenge to efforts to remediate areas at Y-12 National Security Complex (Y-12) and Oak Ridge National Laboratory (ORNL): OREM is running out of space for the contaminated wastes that will result from future cleanup activities.

OREM operates four permitted landfills on the Oak Ridge Reservation (ORR). However, each landfill uses a waste acceptance criteria to determine what type of waste is accepted for disposal. The Environmental Management Waste Management Facility (EMWMF) is the only landfill designed to receive low-level radiological and/or chemical soil and

demolition debris, equipment, and other cleanup waste. It’s about 75 percent full and is expected to reach capacity in the mid-2020s.

More than 90 percent of the total radioactive contamination resulting from building demolition and other cleanup operations goes to offsite disposal facilities. However, OREM needs additional onsite capacity to handle the low-level contaminated debris from excess facilities at Y-12 and ORNL. Many of the facilities, foundations and adjacent land are contaminated from decades of uranium enrichment during the Manhattan Project and Cold War as well as later scientific research, said Brian Henry, OREM’s Y-12 portfolio federal project director. Henry spoke at ORSSAB’s April meeting and provided an update on current waste capacity on the ORR as well as the ongoing efforts to select a new waste disposal site and design the

Issue 71 • July 2018	
IN THIS ISSUE	
Reservation Update	2
Spring Chair’s Meeting	3
Chairs Recommendation	3
Profile: Richard Burroughs	4
Outgoing Members	5
New Student Joins Board	5
Community Budget Workshop	7

proposed facility.

OREM has worked with regulators at the Tennessee Department of Environment and Conservation (TDEC) and U.S. Environmental Protection Agency (EPA) for years on a solution for disposal of anticipated wastes. While the agencies studied many options, ultimately, a new onsite waste disposal facility was deemed the best way forward — it’s safer when hazardous wastes are not transported long distances on public roads and there are significant cost savings, which leaves more funds available for cleanup.

The agencies are finalizing a proposed plan and design for the onsite landfill, the Environmental Management Disposal Facility (EMDF) to be released later this year. Several information sessions are planned to give area residents and other members of the public the opportunity to provide feedback on the plan. OREM and its partner agencies identified multiple sites that were suitable for an onsite disposal facility. Plan documents will describe in detail the steps taken to choose a waste disposal site, including alternatives that were considered. It will also include additional details on



OREM and its partner agencies identified a number of potential sites for the EMDF.

(See Disposal on page 6)

Reservation Update

Final Drums of TRU Waste from ORNL Ready to Go

Workers finished installing vents and sample ports in 67 drums of transuranic (TRU) waste stored at Oak Ridge National Laboratory (ORNL) in April. It was the completion of a decade-long effort by OREM to prepare legacy waste containers for safe transport and disposal.

Transuranic waste is contaminated with elements heavier than uranium. Much of the waste in these drums is composed of items such as beakers, gloves, and other lab equipment. While waste from modern ORNL operations is placed in already vented containers, the old containers were designed differently and required the additional safety measures to ensure the drums did not contain hazardous gases.

The drums will be sent to the Transuranic Waste Processing Center to prepare for shipment to the Waste Isolation Pilot Plant in New Mexico for permanent disposal. More than 4,000 containers were processed since 2005.

Crews Complete Demolition of ETTP Wastewater Facility

In April, workers from OREM contractor URS | CH2M Oak Ridge LLC (UCOR) finished demolition of the East Tennessee Technology Park's (ETTP) Central Neutralization Facility, putting the project five weeks ahead of



Workers prepare to install vents in drums of old TRU in a closed, explosion-proof, high-efficiency particulate air-ventilated unit.

schedule. The facility was constructed in the mid-1980s and consisted of tanks, trailers, and other treatment systems to remove radioactive materials, metals, and suspended solids from wastewater at the site. All operations at the facility ceased in 2013. A new wastewater treatment facility, the Chromium Waste Treatment System, began operating in its place.

OREM has torn down more than 400 facilities and transferred more than 1,000 acres at ETTP as it pursues its goal of transforming the site into privately-owned industrial park. The next facility to go is the Toxic Substances Control Act Incinerator.

New Museum Building Starting to Take Shape

After much planning and coordination, the American Museum of Science and Energy's new home in the Main Street Oak Ridge development is becoming a reality. While still under construction, many interior and exterior walls are in place. Steel beams frame other areas in hints of what is to come. OREM will have space in the new facility, which will showcase a timeline of cleanup work. Other elements like worker protective gear will be on display. The current museum location will close in late July. 🌿



Construction continues on the AMSE entrance in June 2018

Issue 71 • July 2018

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EMSSAB Leaders Gather in New Mexico for Semiannual Meeting

The semiannual SSAB chairs meetings provide leaders from the eight local SSABs across the DOE complex an opportunity to hear from DOE Headquarters staff on the status of a number of cleanup-related issues at all the sites.

A highlight of the spring meeting, hosted May 2–3 in Roswell, N.M. was the tour of the Waste Isolation Pilot Plant in nearby Carlsbad on the first day. It was the first time members had been inside the mine area since the site's temporary shut down after accidents in 2014.

At the working portion of the meeting on May 3, attendees heard updates on the EM program and waste disposition activities from DOE headquarters. Those related to Oak Ridge were:

EM program update from Mark Gilbertson, associate principle deputy assistant secretary for regulatory and policy affairs.

- EM's Fiscal Year 2019 Budget Request is a record high for a second year. It includes construction of the Mercury Treatment Facility at Y-12 and disposition of Uranium-233 at ORNL.
- Progress on excess facilities, including the Biology Complex at Y-12.
- Oak Ridge recently received Critical Decision 2/3 Approval for Building 2026 Uranium-233 Processing, among others.

Budget and planning update by Steve Trischman, director of budget and planning.

- Excess facilities funding for the Critical Experiment and the Beta-4 Tool Storage facilities at Y-12.
- Latest Government Accountability Office report on excess facilities noted progress on many high-risk areas, but



Belinda Price and Dennis Wilson receive safety gear and training prior to entering WIPP.

added substantial efforts were still needed.

Updates on regulatory reform and waste disposition from Mr. Gilbertson.

- DOE is seeking input from all advisory committees on opportunities for regulatory reform to improve effectiveness and efficiency of cleanup.
- DOE is considering ideas to update waste definitions such as those by the Energy Communities Alliance in a recent report.

At each chairs meeting the local SSABs present the top three issues of concern for their sites, as well as their top accomplishments and activities. ORSSAB's three issues were:

1. Support Offsite Groundwater Monitoring
2. Excess Facilities Disposition
3. Ensure Future Waste Disposal Capacity

(See Chairs on page 4)

Chairs Recommendation

Following is a summary of the recommendation the EMSSAB Chairs approved at the Spring 2018 meeting. It is currently being ratified at the individual board level. Once all boards have provided feedback, the recommendation will be sent to DOE.

Recommendation Regarding the Energy Communities Alliance Report on Waste Disposition

In 2017 the Energy Communities Alliance (ECA) sponsored the wide-ranging report "*Waste Management: A New Approach to DOE's Waste Management Must be Pursued*" (available at www.energyca.org/publications) These recommendations would, if implemented, bring about major changes in long-standing national policies regulating the categorization, treatment, and disposition of DOE legacy radioactive waste.

The environmental management of such wastes would henceforth be based, not on origin, but on the radioactive characteristics of the waste and the resulting risks to human health and to the environment.

However, while the report presents a coherent and consistent argument on behalf of a new approach, it would be difficult to determine the merits based on this policy study alone. On the whole, the merits of the new approach are asserted but not really evaluated or empirically justified.

The ECA Report sets forth policy changes to advance desirable and widely-accepted goals of cleaning up nuclear wastes nationally. But given the empirical shortcomings,

(See Recommendation on page 4)

Meet the Secretary: Richard Burroughs

Richard Burroughs, a professional geologist, came to Oak Ridge in 1990 for work. His extensive hydrogeological expertise in aquifer characterizations and remediation in soil and groundwater were a perfect fit with cleanup needs on the ORR. He soon made a home here and became involved in the community.

During his time working in Oak Ridge, he served as the health and safety officer for the scrap yard cleanup project at Y-12. Work began in spring of 2009 and cleanup was finished in 2011. His next job was more of a surprise. Richard never thought he'd get involved with politics until one day Terry Frank asked him if he'd be interested in knocking on doors throughout Anderson County.

"It's a great way to meet people and get to know your community," he said.

Burroughs served as the chief of staff in the Anderson County mayor's office from 2012 until 2017.

He feels the mix of his science background and understanding of

county government concerns gives him a balanced view of environmental issues considered by the board.

"I appreciate that Oak Ridge Environment Management (OREM) embraces a participatory philosophy that listens to citizens who have a stake in what goes on at ORR," he said. "It makes everyone better stewards of the environment and assists community members to support OREM facilitating the missions of all the organizations at ORR."


Richard has been a board member since 2015 and was elected secretary in 2017.

Richard spent 25 years working on Hazardous Waste Remedial Actions Program, Resource Conservation Recovery Act and Comprehensive Environmental Response, Compensation and Liability Act projects across the country. He has been



Richard Burroughs, center, initially got involved in the local community through his friendship with Terry Frank, right. He later served on her staff in the Mayor's Office.


instrumental in board and committee discussions on the Environmental Management Disposal Facility project, groundwater concerns, and budget planning.

Richard is an avid reader and is interested in history. He enjoys golfing when his schedule permits. 

Chairs

(Continued from page 3)

The chairs also composed a welcome letter to Anne White, who was sworn in as Assistant Secretary of the Office of EM in March. While she was unable to attend, the secretary prepared a video introduction for the board. The chairs wrapped up the meeting by approving the Recommendation Regarding the Energy Community Alliance Report on Waste Disposition, which must now be ratified by the members of the local SSABs before being sent to DOE. ORSSAB considered and approved the measure at its June meeting.

The meeting minutes as well as copies of the agenda, presentations, and other meeting materials will be posted to the EMSSAB website (www.energy.gov/emssab) or are available on request from ORSSAB staff. 

Recommendation

(Continued from page 3)


the report should be regarded, at this juncture, as a worthwhile, but preliminary policy study. A pro or con recommendation on the merits of the proposal is not possible at this time. More information is needed.

Recommendation

1. The Chairs recommend that DOE/EM undertake a comprehensive analysis of the ECA report, including technical, financial, environmental, safety, transportation, and other implications of implementing its recommendations. This is for the purpose of evaluating the impact of such changes.
2. The Chairs recommend that DOE/EM evaluates the site-

specific impact of implementing the recommended changes including both potential risks and benefits.

3. In undertaking its evaluation, the Chairs recommend that DOE/EM should address, at a minimum, the questions developed by the Chairs set forth in the attachment.
4. The Chairs recommend that DOE/EM provide a time line for performing the analysis and brief its results on an ongoing basis to the Chairs and their respective SSABs for input.

A complete copy of the draft recommendation and the ECA report is available on request from ORSSAB staff. The final recommendation will be posted on the ORSSAB website once it is available. 

Board Members Beatty, Bales, Gonzalez Recognized for Their Service

The Oak Ridge Site Specific Advisory Board (ORSSAB) and Oak Ridge Environment Management (OREM) thanked three members of the board who completed their terms of service in June. Christopher Beatty, Kathryn Bales and Rosario Gonzalez received plaques recognizing their contributions to the board.



Christopher Beatty

Christopher Beatty served one term on the board and was very interested in groundwater, excess contaminated facilities and waste disposal capacity issues. He was an

active member of the Environmental Management/Stewardship (EMS) Committee. Chris was impressed with the last tour of Y-12 National Security Complex (Y-12), which was conducted to explain and explore waste disposal capacity at the Oak Ridge Reservation (ORR). He said, “The people who conducted the tour were very knowledgeable and explained the waste systems, waste categorization and design of the Environmental Management Waste Management Facility (EMWMF) and the proposed

site for Environmental Management Disposal Facility, showing the use of good practices and sound scheduling.” Chris is still interested in groundwater issues and would like to possibly serve on the ORSSAB in the future. “Being part of the ORSSAB was a great experience and I appreciate the interaction with management of OREM. Jay Mullis, David Adler and Susan Cange were very open and respected the board, making a good team,” Chris said.

His schedule is very busy due to additional responsibilities taken on at his workplace as well as serving as President of the 100 Black Men of Greater Knoxville Chapter.



Kathryn Bales

Kathryn Bales started her term in July 2016 with ORSSAB when she was an undergraduate at the University of Tennessee (UT) majoring in nuclear engineering. She graduated in 2017 and has been an intern with Oak Ridge National Laboratory (ORNL) at the Center for Radiation Protection Knowledge for the last year. Katie was accepted into

a graduate program at the University of Texas Health Science Center and plans to pursue a Doctorate of Medical Physics (DMP). She enjoyed gaining the perspective of the community regarding nuclear issues. Her training in nuclear engineering gave her a technological perspective on issues and now she feels she has a broader understanding of the nuclear field.



Rosario Gonzalez

Rosario Gonzalez served two years on ORSSAB and has participated in the EM and Stewardship Committee as well. Rosario is busy with her position as a cafeteria manager at St. Mary’s Catholic Church in Oak Ridge and has enjoyed being part of the ORSSAB.

Her husband worked at ORNL for many years and she wanted to know more about the environmental cleanup of ORR.

“The ORSSAB does a great job of getting involved in projects and discussing the cleanup issues and recommending actions they think should be taken to safeguard the community,” she said. 🌱

Board Welcomes Hardin Valley Student Olivia Fleenor at June Meeting

Each year the ORSSAB seats two non-voting student representatives from area high schools to participate and share the viewpoints of local students on environmental issues.



Olivia Fleenor

Olivia Fleenor is a new student representative to the board. She will serve on the board for a one-year term through April 2019.

Olivia will be a senior at Hardin Valley Academy in

the fall. She is an honors and advanced placement student who enjoys chemistry and biology. She hopes to attend John Hopkins University and plans to pursue a professional career in medical research after college.

She is a member of the Hardin Valley Academy’s Wind Ensemble and Marching Band and has been in the last three Knox County Honor Bands. Olivia was also selected to participate in the 2017 East Tennessee School Band and Orchestra Association.

Olivia is active in her community and has volunteered over 400 hours

in the last few years. She focuses her volunteer activities with her church and nursing homes. She is particularly passionate about helping Alzheimer’s patients.

She has participated in two mission trips that have shaped her life. In 2016, Olivia worked with the Dream Center in Los Angeles to send aid and hope to the homeless. In 2017, she travelled to Guatemala with Living Water Ministries and helped many schools and orphanages. 🌱

Disposal

(Continued from page 1)

the preferred onsite disposal location, which is in Central Bear Creek Valley. It is an approximately 70-acre area that is relatively flat and includes room for support systems such as a water treatment facility, wastewater management and/or storage, office, utilities, and roads.

“The key driver to getting [a second facility] open sooner rather than later is to minimize programmatic risk,” said Henry. “We want to make sure we are ready and successful if Congress gives us cleanup project money.”

Ideally, the new facility would open about two years prior to EMWFM’s closure, he added. The two-year overlap would allow for structural flexibility. As EMWFM closes, it would be best if a second facility was open so that wastes more suited as top fill could go to EMWFM, while those more suited to forming a base foundation could be diverted to the new site.

OREM received a near-record




ORSSAB members toured EMWFM as well as other waste sites in April. L-R: DOE representative Ben Williams along with Susan DePaoli and Mark Cleveland provided members Venita Thomas, Martha Deaderick, Christopher Beatty, John Tapp, Bonnie Shoemaker, Michelle Lohmann, Leon Shields, Fred Swindler and Dennis Wilson with detailed information and answered questions.

amount of funds in FY 2018, including additional funds specifically to demolish the Biology Complex at Y-12. If that funding level continues and if an approximate two-year overlap of operations is to be achieved, work needs to start on the facility as soon as

possible, Henry said.

As part of the approval process for a new disposal facility, OREM started water and soil sampling at its preferred site in central Bear Creek Valley late last year. Additional access roads will be needed to facilitate other types of sampling and characterization of the facility as well.

But a final Record of Decision between DOE, EPA, and TDEC won’t come until sometime in 2019 at the earliest and the current estimate to open EMDF is 2024. OREM would like to speed up that schedule by starting site preparation and other efforts in tandem with the decision-making process where possible.

One major activity needed for the current conceptual design of EMDF is rerouting roads. Both the DOE Haul Road and Bear Creek Road would need to shift to accommodate the preferred site for EMDF. Completing construction of new roadways prior to starting on the landfill itself could save up to six months, said Henry. Some surface waterways will also need to be rerouted. Those actions will need their own appraisals and permits. Permit paperwork and other non-field actions could also be started ahead of time. 

ORR Landfills

DOE operates four landfills for safe and compliant disposal of ORR remediation, demolition, and sanitary waste.

Landfill IV - Classified, sanitary industrial waste (including office waste, equipment, construction/demolition debris)

Capacity of 89,000 cubic yards
Opened in 1989
Currently about 50% full

Landfill V - Sanitary industrial waste (including office/cafeteria waste, equipment, construction/demolition debris)

Capacity of 2.1 million cubic yards
Opened in 1994
Currently about 40% full

Landfill VII - Unlined disposal areas receive building construction and demolition debris

Capacity of 2.09 million cubic yards
Opened in 2001
Currently about 25% full

EMWFM - Low-level radiological and/or chemical soil and demolition debris, equipment, cleanup waste

Capacity of 2.2 million cubic yards
Opened in 2002
Currently about 75% full
Accepted more than 160,000 waste shipments

Construction of the proposed new landfill, EMDF, will allow OREM to complete its cleanup responsibilities at ORNL and Y-12.

OREM Receives \$141.5 Million Increase in FY 2018 Appropriations

For FY 2018, Congress approved a \$639 million budget for DOE's Oak Ridge Environmental Management (OREM) Program, representing an overall increase of \$141.5 million.

OREM leadership gave a detailed overview of those budget numbers at its Community Budget Workshop on May 9. The annual event gives members of the public a chance to understand the department's budget, progress, and priorities and ask questions. Attendees were also updated on progress at East Tennessee Technology Park (ETTP) and the coming shift of EM resources to other projects at ORNL and Y-12 upon its completion.

On the budget

OREM has three main funding mechanisms for its various projects, said Alan Stokes, OREM planning and execution associate director.

The Uranium Enrichment Decontamination and Decommissioning Fund is used for the cleanup of ETTP. OREM received \$214 million in FY 2018, an increase of \$500,000 over FY 2017. This fund was specifically set up for the cleanup of sites that conducted uranium enrichment, which included the demolition of the K-25 Gaseous Diffusion Process Building.

The Defense Fund is used for projects such as transuranic waste operations, excess facilities disposition, surveillance and maintenance, on-site waste disposal, and groundwater projects such as the ongoing construction of the Mercury Treatment Facility at Y-12 National Security Complex (Y-12). OREM received \$417 million in FY 2018 from the Defense Fund, a \$139 million increase over FY 2017.

Non-Defense Funding is used for historic preservation. OREM was allocated \$8 million from the Non-Defense Fund this fiscal year, an increase of \$2 million. These funds



ORSSAB members who attended this year's Community Budget Workshop were able to ask questions of OREM Manager Jay Mullis and other local leadership.

are primarily focused on the historic preservation of K-25 and includes interior and exterior construction of the K-25 History Center.

The budget cycle runs two years in advance, Stokes explained, to provide time for oversight at several levels of government. OREM is currently working on the FY 2020 budget submission, he added. Stokes also walked attendees through the federal budget process, which carries requests from the local site level through several levels of consolidation until they are included in the budget the president submits to Congress, where they may undergo further changes prior to being signed into law.

Nearing Completion at ETTP

OREM's main cleanup contractor, URS | CH2M Oak Ridge (UCOR) is rapidly nearing completion of its work at ETTP. It recently surpassed the \$2 billion mark on its \$2.9 billion cleanup contract for cleanup at the site. The contract runs through 2020 when

(See Budget Workshop on page 8)



Join Us for the Board's Annual Planning Meeting

9 a.m.-2:30 p.m. Saturday, Aug. 25

Black Bear Inn & Suites
1100 Parkway
Gatlinburg, TN 37738

Each year ORSSAB gathers to select its work topics for the coming session. It also solicits suggestions from partner agencies OREM, EPA and TDEC.

Join us in Gatlinburg in August to preview upcoming topics, recap the board's work in the current session, and hear top concerns from state and regional organizations. Time for public comment is also scheduled.

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

Budget Workshop

(Continued from page 7)


OREM plans to achieve Vision 2020 – completing major cleanup at ETTP and transformation of the site into a privately owned industrial park that drives economic growth in Oak Ridge.

OREM has removed more than 400 facilities at the site so far, said David Adler, OREM acting deputy manager. More than 1,000 acres of land and 14 buildings have been transferred for private use. The site is already a success with more than 20 companies operating from ETTP and employing hundreds of workers. About 3,000 acres at the site have been marked for conservation and are integrated into the reuse plans as greenways, trails, wildlife sanctuary and other recreational use.

More buildings remain that will be demolished as well as follow-up groundwater and soil remediation, but the project is definitely on the down slope to the finish, said Adler.

Risk Reduction Beyond ETTP

The cleanup work of OREM will start to change focus from working primarily at ETTP, which is nearing completion, to working more on projects at the Y-12 National Security Complex (Y-12) and Oak Ridge National Laboratory (ORNL). Some of the defense environmental cleanup funds in the budget are allocated specifically for six remaining buildings at the Biology Complex at ORNL, said Jay Mullis, OREM manager. He outlined three goals for OREM after ETTP cleanup:

- Disposition uranium-233 inventory at ORNL, either directly or through down-blending operations.
- Disposition of transuranic waste at ORNL, which will include disposal of solid debris and construction of the Sludge Processing Facility for liquid wastes.
- Address mercury contamination at Y-12 through proper cleanup planning. This effort includes construction of the Mercury Treatment Facility to reduce mercury in water exiting Y-12 and demolition of contaminated buildings there. 



ABBREVIATIONS

DOE – Department of Energy
EM – Environmental Management
EMDF – Environmental Management Disposal Facility
EMWMF – Environmental Management Waste Management Facility
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
TDEP Tennessee Department of Environment & Conservation
UCOR – URS CH2M Oak Ridge
WIPP – Waste Isolation Pilot Plant
Y-12 – Y-12 National Security Complex

UPCOMING MEETINGS

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, September 12
EM & Stewardship Committee: Wednesday, September 26

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