



# 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

## OREM Identifies Ways to Progress in Limited Operations

In response to the COVID-19 pandemic, the Department of Energy (DOE) implemented limited operations in April. A reopening plan was launched in late May for Oak Ridge workers to begin a phased restart to select projects in the field.

During limited operations, a small number of contractors for the Oak Ridge Environmental Management Program (OREM) remained in the field to ensure the safety of the public, workers, and the environment. Their work consisted of operating water treatment systems, maintaining waste treatment and disposal facilities, and inspecting the aging, contaminated facilities at East Tennessee Technology Park (ETTP), Oak Ridge National Laboratory (ORNL) and Y-12 National Security Complex (Y-12).

OREM also identified ways to continue advancing critical infrastructure upgrades at ORNL's Liquid Low-Level Waste System, where one of the two pumps for the system failed earlier this year. UCOR received two new pumps just before work was halted. These pumps, which will both replace and add capacity to the system, send material through a mile of underground pipes to 50,000-gallon storage tanks.



*OREM continued progress on cleanup work at ORNL's Liquid Low-Level Waste System during limited operations. The system's barometric projection tower needs to be removed.*

*(See Reopening on page 4)*

Issue 79 • July 2020

### IN THIS ISSUE

Reservation Update . . . . .	2
Critical Topics for FY 2021 . . . . .	5
OREM New Hire . . . . .	8

## 25 Years of Citizens Serving Their Communities

Citizens of East Tennessee have been serving on the Oak Ridge Site Specific Advisory Board ORSSAB for a quarter-century. In keeping with Tennessee's reputation as the Volunteer State, they have given their time and effort to board meetings as well as outside work researching topics and developing recommendations without pay because they want to improve their

communities. As the board celebrates its 25th Anniversary, we thank those individuals—nearly 200 in all—for their dedication. The board is always looking for new faces and keeps a record of interested applicants to join when an opening is available. Here's a refresher on what we do.

*(See History on page 4)*

## Reservation Update

### DOE Adds \$254M to Contract for U-233 Removal at ORNL

In June DOE and Isotek Systems signed a contract modification to continue processing operations to disposition Uranium-233 (U-233) material at ORNL through 2024. Isotek has worked on the U-233 Disposition Project since 2003.

The contract continues that partnership and authorizes \$254 million to fund and continue Isotek's mission to safely dispose of more than 80 percent of the remaining U-233 inventory. To date, approximately half of the inventory has been removed from Building 3019 and directly disposed.

The remaining inventory requires processing and downblending prior to disposal, which began in October 2019 in nearby building 2026. In addition, through a novel public-private partnership, Isotek's process also extracts a rare isotope of thorium from the waste that is vital to cancer treatment research.

Building 3019 is the nation's oldest operating nuclear facility and was built in 1943 to support the Manhattan Project. Once all nuclear material has been removed, DOE plans to demolish it and remediate the site as part of the cleanup program.

### Last Major ETTP Facility Ready for Demolition

Workers have completed deactivating Building K-1600, a former test and demonstration facility for uranium enrichment centrifuges at ETTP, and now it is ready for demolition.

The 42,000-square-foot K-1600 facility was transferred to Oak Ridge cleanup contractor UCOR in September 2019 to complete deactivation and demolition. Centrus Energy Corp. had leased Building K-1600 since 2002 and finished decommissioning activities prior to the transfer. The company no longer needed the lease after consolidating its centrifuge testing and demonstration



*Workers with Isotek Systems use gloveboxes to safely open canisters and handle hazardous materials in the downblending process of U-233 stored at Oak Ridge National Laboratory.*

activities into a location in Oak Ridge.

Building K-1600 is a recognizable facility at ETTP due to its height and location. It sits in the center of the footprint for the former mile-long, U-shaped K-25 Building. K-25 was one of the site's five massive gaseous diffusion buildings that once held the title of the world's largest building.

Deactivation of K-1600 included rendering the building "cold and dark," which means disconnecting utilities to the structure and installing temporary utilities, such as electrical power. It also included asbestos abatement and waste removal. Demolition is scheduled to begin this summer.

### Teardown Marks Continued Path to Vision 2020 at ETTP

OREM and UCOR crews recently took down ETTP's K-2500-H, also known as the Segmentation Shop. The facility had been used to prepare contaminated equipment, piping, and other items generated by demolition projects for shipment for disposal.

Constructed in 2007 near the massive K-25 gaseous diffusion building, the Segmentation Shop was used to process items from K-25, the K-27 gaseous

diffusion building, and other facilities that once supported the site's uranium enrichment operations.

While crews have completed demolition of all facilities that previously supported uranium enrichment operations, the Segmentation Shop became the latest in a long list of unneeded buildings that crews have removed at ETTP.

Only a handful of structures remain at the site. Demolition and major cleanup activities are expected to be completed at ETTP this year — a goal known as Vision 2020. It will account for the elimination of more than 13 million square feet, marking the first time in the world an entire uranium enrichment complex is removed.

OREM and UCOR are working together to transform ETTP into a multi-use industrial park, national park, and conservation area for the community. That vision has already started to become a reality. OREM has transferred almost 1,300 acres at ETTP for economic development, with another 600 acres slated for transfer in the years ahead. OREM has also set aside more than 100 acres for historic preservation and placed more than 3,000 acres in conservation for community use.



## Workers Resume Demolition on Centrifuge Complex

Demolition has resumed on the Centrifuge Complex at ETTP after an almost two-month pause in field work due to protective measures in response to the coronavirus.

Spanning 235,000 square feet, the complex is the largest and tallest collection of structures remaining at ETTP. It was built in stages to develop, test, and demonstrate the capability of centrifuge technology for uranium enrichment. The last of these facilities ceased operation in the mid-1980s.

Crews are taking down the final two sections of the Centrifuge Complex. Those include the K-1210 Complex, which served as a pilot plant for testing feed, withdrawal, and depleted uranium hexafluoride transfer systems, and the K-1220 Complex, which was used primarily to test production centrifuges.

At 180 feet high, the K-1220 tower was too tall to be safely torn down with conventional heavy equipment. Instead, workers in June pulled down the facility using giant mechanical devices known as winches after extensive training.

With the tower down, workers will now focus on removing the debris and finalizing demolition on the K-1210 complex.

The project started in October with the demolition of the K-1004-J laboratory, an original Manhattan Project facility built for research and development, and the K-1200 facility, known as the Advanced Machine Development Laboratory and Component Preparation Laboratory.

The entire project is scheduled for completion later this summer.

This project is part of a larger effort



*Crews are working to take down the final two facilities at ETTP's Centrifuge Complex. The K-1220 tower, left, was the tallest structure remaining on site before workers demolished it in June.*

by OREM and its cleanup contractor UCOR to complete all demolitions and major site cleanup at ETTP by the end of this year. It will mark the first time in the world an entire uranium enrichment complex is removed.

## EM Leader Responds to Two Board Recommendations

ORSSAB is one of eight advisory boards across the country that offer feedback to DOE on local environmental cleanup activities. Collectively the group is known as the EMSSAB. Twice a year, officers from each board gather with DOE officials to discuss issues affecting all the sites. On October 30, 2019, the group passed two recommendations. In June, DOE headquarters responded to those items. The first recommendation concerned the Disposition and Transport of Nuclear Material. It was subsequently approved by seven of the eight of the local boards, including Oak Ridge. In his response, Senior Advisor William "Ike" White agreed with EMSSAB on the importance of safe management, transport, and disposal of wastes and acknowledged the importance of using lessons learned from the Waste Isolation Pilot Plant throughout the

DOE complex. He also reiterated the department's commitment to working with local boards on its budget request each year.

The second recommendation concerned that emphasis on public engagement in the budget process. It was approved by all eight boards.

"Timely and frequent engagement with stakeholders is crucial to EM's success," White said in his response. "While opportunities for stakeholder engagement have been limited ... in response to the current situation regarding COVID, I remain committed to continued engagement whether through virtual meetings or in-person meetings as onsite operations at EM sites resume."

He noted that all EM sites in February received guidance that formalizes a process for engaging in budget and planning discussions with stakeholders at the start of each calendar year.

The full text of the recommendations and responses can be found at the board's website, [energy.gov/orssab](http://energy.gov/orssab).

Issue 79 • July 2020

### STAFF

Editor: Shelley Kimel

Writer: Sara McManamy-Johnson

Review Board: Amy Jones, Shell Lohmann, Melyssa Noe, Leon Shields, Bonnie Shoemaker, Ben Williams

## History

*(Continued from page 1)*

ORSSAB's primary responsibility is to provide independent advice and recommendations to DOE on its environmental cleanup and waste management operations in Oak Ridge. Currently, the board's primary focus topics deal with groundwater remediation and waste disposal. In addition, the board provides input to DOE on cleanup project prioritization as it relates to OREM's budget request, which is submitted two years in advance. Discussion of these topics were affected by the necessary cancellation of meetings this year and so will receive urgent attention as the board resumes deliberations. An overview of these critical issues begins on Page 5.

General board business is handled by the Executive Committee, which is composed of the elected officers of the board and the chair of the EM & Stewardship Committee. The committee sets board agendas, coordinate the work, and transacts business as may be necessary between board meetings.

The EM & Stewardship Committee is responsible for monitoring the major cleanup activities on the ORR as well as stewardship requirements for areas of the reservation that have been remediated, but remain contaminated long-term. It is where members actively draft and refine recommendations to be considered at full board meetings.

ORSSAB can have up to 22 members. Technical expertise is not required. Individuals apply for membership and are selected by DOE to reflect a diversity of occupations, interests, gender, and

race of persons living near the ORR. DOE considers Anderson County and its eight adjacent counties. As part of its education mission, ORSSAB seats two non-voting student representatives from local high schools each year. The board also has non-voting agency liaisons from the Environmental Protection Agency (EPA) Region 4, the Tennessee Department of Environment and Conservation (TDEC), and DOE.

The Oak Ridge board is one part of a national EMSSAB organization that is federally chartered to provide input to DOE. Currently there are seven other local boards that make up the EMSSAB. Twice each year the leadership of the eight boards meet to discuss common issues and may craft recommendations to send to DOE Headquarters such as those mentioned on page 2.

## Reopening

*(Continued from page 1)*

Replacing these pumps is a complicated undertaking since they are housed in underground vaults with radiological and other hazards.

Engineers working remotely were able to prepare mechanical and electrical engineering instructions so a portion of a 25-year-old sludge-mixing system can be safely disconnected and removed from the top of the three-foot-thick concrete vault. They also designed a new electrical distribution system. Additionally, hoisting and rigging engineers developed a Critical Lift Plan for equipment removal, and waste packaging and transportation specialists collaborated with engineers to develop maintenance and shipping plans.

Progress on cleanup continued in other ways as the federal and contractor workforce pivoted to remote work. OREM instituted virtual meetings and digital document approvals both internally and with outside partners including regulators at the EPA and TDEC. Online sharing of photographs and drawings, coupled with site walk-

downs and remote site visits allowed workers to make cleanup preparations throughout the site. These efforts ensured momentum as the site begins resuming operations.

Much like other local reopening plans, DOE instituted a phased restart of operations in Oak Ridge based on risk analyses that account for several factors, including available health data, remaining state and local restrictions, use of protective equipment, and facility preparedness. Phase One of the three-phase process began on May 18. The first phase brought back workers who perform high-priority work and have minimal need for personal protective equipment (PPE). It includes heightened safety precautions, procedures, and controls to ensure workers' health. DOE will continue to monitor the local conditions to decide when to remove additional restrictions for later phases.

As work resumes, DOE is evaluating with contractors the impact of limited operations on cleanup milestones. Similar discussions are ongoing for regulatory deadlines and permits.



### Upcoming Meetings

Due to recommendations to avoid large gatherings and practice social distancing, ORSSAB has not yet scheduled its next meeting. The board is working with DOE on possible solutions for fall.

We will continue to monitor the situation and provide updates as circumstances change.

Check our website at [www.energy.gov/orssab](http://www.energy.gov/orssab) for the latest information.

For questions or to subscribe to our news updates or The Advocate, email [orssab@orem.doe.gov](mailto:orssab@orem.doe.gov) or call 865-241-4584.



## Prepare for FY 2021: Major Topics for ORSSAB

Each year ORSSAB creates a calendar of topics to be addressed in its upcoming session. Topics include board suggestions, DOE project updates and requests for recommendations, and input from regulators at EPA and TDEC.

That process is underway now, and the board looks forward to hearing updates from the agencies on new topics as DOE completes cleanup at ETTP. Along with that transition, the board expects to hear more about cleanup efforts at ORNL and Y-12.

However, some central long-term topics are always in focus for the board and will take a greater emphasis in FY 2021, which begins October 1.

Here is an update and primer on these issues: Waste Disposal, Groundwater, and the OREM budget request.

### Agencies Discuss New Disposal Site

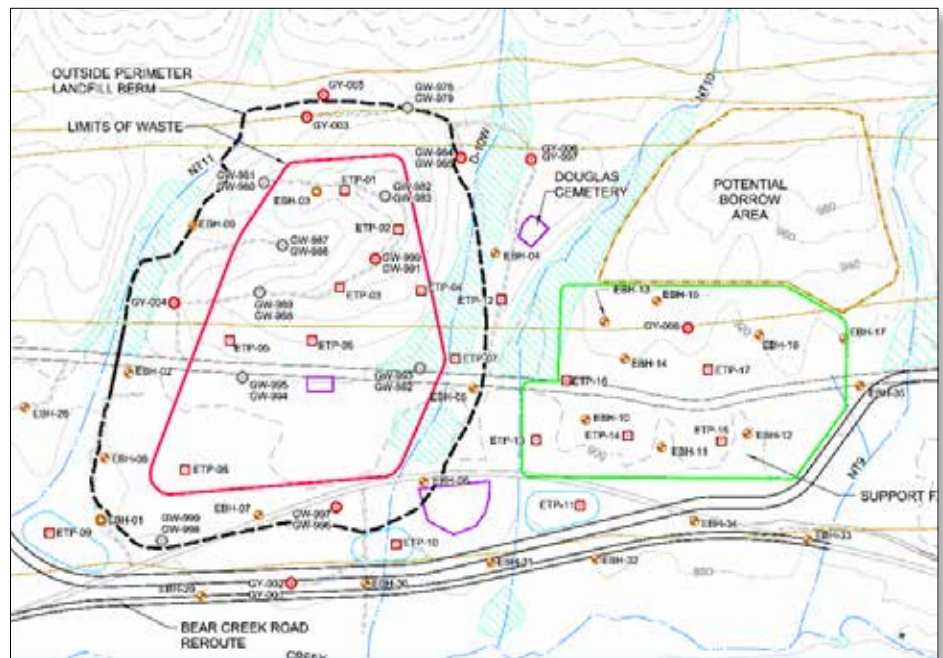
The pressing need for additional onsite waste disposal capacity for OREM cleanup continues to face a long and complex process toward a solution. ORSSAB had scheduled an update on the issue for April, which was cancelled as part of OREM's and the board's compliance with state and federal coronavirus guidelines.

DOE in 2018 issued a proposed plan for a new landfill, the Environmental Management Disposal Facility (EMDF). ORSSAB held a meeting on the project plan in November 2018 and public comment was accepted through January 9, 2019. In the meantime, the fifth cell of the current disposal facility is nearly full and waste is being placed in the sixth and last cell. The sixth cell is expected to be full later this decade. To keep cleanup running smoothly, it would be best if the new disposal site could be open prior to the closure of the current site.

The agencies over the past year have been sharing ideas for changes and adjustments to the proposed plan. This correspondence can be found at the



Above: An aerial view of the proposed EMDF location in relation to other DOE facilities.  
Below: Plans for the EMDF site show site topography and geological features.



DOE Information Center and online at [doeic.science.energy.gov](http://doeic.science.energy.gov). A Record of Decision could come later this year.

However, because DOE has a three-party agreement with state and federal regulators, its project plans and any changes, including EMDF, must be approved by all parties or, occasionally,

worked out through a legal process called a "formal dispute." Currently, there is formal dispute between DOE and EPA on a topic that impacts planning for EMDF that is awaiting a decision by leadership at the top levels of the agencies.

(See Topics on page 6



## Topics

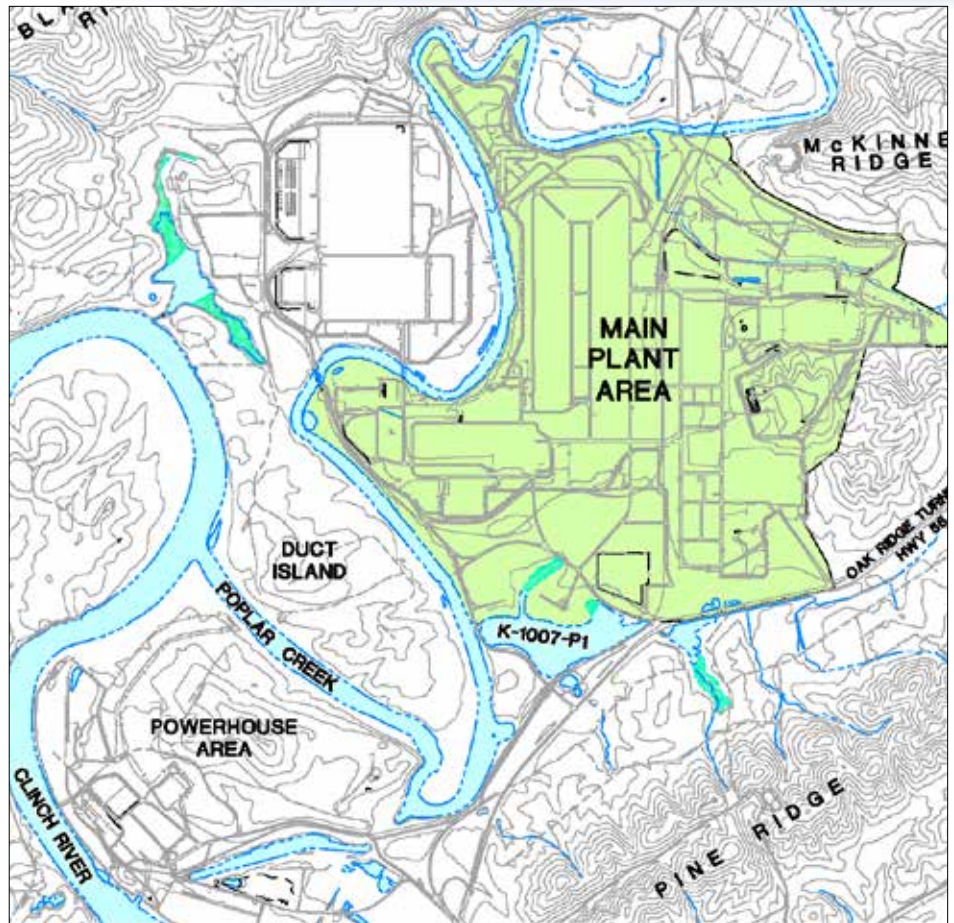
(Continued from page 5)

### Choosing a Groundwater Remedy

ORSSAB last received an update from OREM on its Groundwater Plan for ETTP at the board's November 2019 meeting. At that time, OREM's David Adler detailed plans to release a draft feasibility study on the Main Plant Area at the site. It was released later that month. The study, which spreads over four volumes and more than 1,000 pages, will serve as the basis for making decisions on how to proceed with groundwater cleanup once it is finalized, he said.

ORSSAB previously scheduled a meeting to discuss potential groundwater solutions in June, which was cancelled. The meeting will be rescheduled and will be the first time ORSSAB will get to weigh in on final options to address groundwater contamination within the main plant area, also known as Zone 2, at ETTP. A separate document will cover other areas of ETTP, referred to as Zone 1. Zone 2 is where most groundwater contamination is located, because it includes most of the major facilities associated with uranium enrichment and related activities during the Manhattan Project.

Board members have been able to review the documents remotely. EPA and TDEC provided feedback to OREM in the spring work on the draft study continues. A new draft incorporating those comments was anticipated in November of this year. However, DOE has requested additional time for that draft from the agencies. It will use the additional time to plan



*The draft feasibility study documents include copies of research and diagrams created by OREM over many years of studying the site's geography and identifying contaminants.*

workshops on adaptive management, remedial action objectives, plume source binning and comment resolution meetings with regulators. Newly approved deadlines now indicate a second draft in March 2021.

Other groundwater efforts are also underway. After addressing Main Plant Area groundwater decisions, OREM will address groundwater contaminants in the K-31/K-33 site. Information for these studies comes from nearly 500 groundwater monitoring wells

at ETTP. Recent monitoring and testing results were encouraging and indicated that, outside the main plant area, heavy intervention will likely not be necessary, Adler said at the meeting. Several measures showed contaminants only slightly above drinking water standards. OREM continues to try and meet drinking water standards in remediation attempts, but groundwater use on the site will be restricted through deed covenants in any case and DOE will continue monitoring the site in perpetuity to ensure safety of the public and the environment.

Ultimately these decisions will be laid out in a final proposed plan, which will include public comment. These efforts will be compiled in a final Record of Decision between the three agencies.

## RESOURCES

The feasibility study is available at the DOE Information Center or online at [doeic.science.energy.gov](https://doeic.science.energy.gov). Search for “**Main Plant Groundwater Feasibility Study**” or document number **01-2835**

Groundwater monitoring data is released in the annual Remediation Effectiveness Report (RER).

Find it at [doeic.science.energy.gov](https://doeic.science.energy.gov). Search for document number **01-2757**.

(See Topics on page 7)



## Topics

(Continued from page 6)

### Prioritizing Funds for Cleanup

Each year, OREM requests the board's input on its request for funding. Board suggestions are included in the documents OREM sends to EM Headquarters in Washington, D.C. to be merged with the overall DOE budget request. That, in turn, is included in the overall budget request the president makes to Congress.

Due to the complex budget process, funding requests are made two years in advance. ORSSAB planned to review OREM's FY 2022 budget request in May. Unfortunately, OREM may have to submit that request without board input this year to meet its deadlines. However, the board looks forward to discussion of the FY 2023 budget requests as soon as normal meetings can again be held safely.

In the meantime, DOE's FY 2021 budget is making its way through the Congressional approval process. EM leader William "Ike" White testified before Congress in March regarding the department's \$6.07 billion request.

White emphasized a "pivot point" for EM sites across the country as years

of investment in building facilities to treat wastes stored in tanks at many sites is on the verge of completion. EM will soon shift from construction to operation and waste treatment, he said.

While Oak Ridge is not involved with these tank waste efforts, the budget includes \$432 million to several key priorities here. The funds will support cleanup initiatives that also benefit DOE's broader national security and scientific research missions, White said. Those include:

- Complete demolition of the former Biology Complex at the Y-12 National Security Complex;
- Progress in dispositioning the remaining stockpile of uranium-233 at Oak Ridge National Laboratory;
- Construction activities at the critical Mercury Treatment Facility at Y-12;
- Shipments of transuranic waste to WIPP for disposal; and
- Soil and groundwater remediation activities at ETTP

In his comments White noted that EM anticipates completing core cleanup at ETTP this year, which will mark the first time in the country an entire uranium enrichment complex has been completely removed—

along with significant risk reduction and environmental benefits for the community.

Video of White's testimony and follow on questions from members of the House can be found online at [https://appropriations.house.gov/subcommittees/energy-and-water-development-and-related-agencies-116th-congress/congress\\_hearing](https://appropriations.house.gov/subcommittees/energy-and-water-development-and-related-agencies-116th-congress/congress_hearing).

Energy Secretary Dan Brouillette likewise testified before a Senate subcommittee in March. Video of that is available at [www.appropriations.senate.gov/hearings/review-of-the-fy2021-budget-request-for-the-us-department-of-energy](http://www.appropriations.senate.gov/hearings/review-of-the-fy2021-budget-request-for-the-us-department-of-energy)

Appropriations bills arising from these hearings should begin to take shape in late summer in both the House and Senate. This is a bit later than usual due to Congress losing several weeks to closures related to the coronavirus.

Once those bills pass each chamber, any differences will need to be resolved. If Congress does not pass a budget resolution before the end of the fiscal year (September 30) it may instead pass "continuing resolutions" so funding is not interrupted while the budget is finalized and sent to the president for his signature into law.



## New OREM Hire Brings Decades of State, Private Regulatory Expertise

OREM has added a new member to its Quality and Mission Support Division. In April Roger Petrie joined OREM as a regulatory affairs specialist. In this role, Petrie will serve as the project manager for the Federal Facility Agreement (FFA) with state and federal regulatory agencies.

Petrie, who brings more than 20 years of FFA experience to his new role, was most recently with UCOR as a regulatory support and FFA Lead. As part of this role, he also handled environmental stakeholder relations and became a familiar face to many ORSSAB members as he regularly attended board meetings to represent the cleanup contractor, provide insight, and answer questions for members on

ongoing cleanup efforts.

Petrie will work with the agencies to fulfill OREM's cleanup requirements and solve issues at the local level, but will also have additional duties that may bring him back to the board as the position develops.

Prior to UCOR, he served as the state's project manager for the FFA in Oak Ridge with TDEC's DOE Oversight Division.

Petrie has a master's in wildlife and fisheries science from the University of Tennessee, and he has taught biology at Pellissippi State Community College since 2002. He is an Oak Ridge native and is active in several community organizations.



Roger Petrie



**ABBREVIATIONS**

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund  
DOE – Department of Energy  
EM – Environmental Management  
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  
TDEC – Tennessee Department of Environment & Conservation  
UCOR – URS | CH2M Oak Ridge  
Y-12 – Y-12 National Security Complex

**UPCOMING MEETINGS**

As the United States responds to COVID-19 DOE is postponing all SSAB meetings until further notice.  
ORSSAB will continue to monitor the situation and provide updates. Check the website for the latest information.

Oak Ridge Site Specific Advisory Board  
P.O. Box 2001, EM-90  
Oak Ridge, Tennessee 37831  
www.energy.gov/ORSSAB  
orssab@orem.doe.gov

