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

Issue 65 • January 2017

DOE's Excess Contaminated Facilities in Oak Ridge Are in National Spotlight

Following a 2015 audit by the Government Accountability Office (GAO), DOE's excess contaminated facilities have come under increased scrutiny. Not only do these deteriorating structures pose risks to workers and the environment, but they also carry the burden of high maintenance costs for the government programs that continue to manage them. Some of the worst of these facilities are located in Oak Ridge, including the notorious Alpha 5, considered to be at the top of the GAO's list as the "worst of the worst." There are approximately 350 excess contaminated facilities located on the Oak Ridge Reservation (ORR), and nearly half of those are classified as high risk, accounting for 40% of the high-risk facilities in DOE's nationwide inventory.

Prior to 2003, when a more rigorous transfer process was established, the Oak Ridge Environmental Management program (OREM) assumed responsibility for many of these excess facilities. The de facto practice, however, meant that the cleanup program took on the burden of additional cleanup scope without additional funding, resulting in a backlog of facilities in need of surveillance and maintenance and left without a clear path toward decontamination and decommissioning (D&D). In order to keep up with the demands of the existing OREM work scope and milestones, work on these facilities was often deferred in an overall strategy to address the most pressing priorities and potential risks to public health, worker safety, and the environment.

FY16 funding for excess contaminated facilities addressed priorities at facilities such as Oak Ridge National Laboratory's Homogeneous Reactor Experiment.

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To help alleviate EM's burden, transfer agreements now govern these properties, stipulating, among other items, that funding for D&D must be in place before EM assumes responsibility. Many of the facilities in Oak Ridge that will ultimately transfer to OREM are currently managed by EM and other programs, including the National Nuclear Security Administration, Office of Nuclear Energy, and Office of Science.

Locally, OREM had a head start on assessing the site's excess facilities in relation to the program's overall cleanup mission. Prior to the 2015 GAO report, OREM had already begun to address concerns for its own excess facilities and their rising maintenance costs. In 2007, OREM partnered with operating programs at the Y-12 National Security Complex (Y-12) and Oak Ridge National Laboratory (ORNL) to identify facilities, conduct walkthroughs, perform research and characterization, and assess the overall scope and hazards likely to be encountered in facilities that will become OREM's responsibility in the future.

The assessments in 2008 estimated a $9-14 billion cost with a 25-year

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National Spotlight on Excess Contaminated Facilities

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duration. Today, however, funding for D&D has been pushed out further in the future, with the first demolition and removal operations scheduled to begin at Y-12 sometime in the 2020s.

Increased attention from the GAO audit contributed to funding "plus-ups" for FY16, and the Oak Ridge site benefited from the additional line item funding from Congress.

OREM received $28 million for excess contaminated facilities in FY16 and has used those funds to help stabilize structures for long-term stewardship until D&D begins.

Excess facilities funding covers a range of risk-reduction activities, including removal of hazardous material, some repairs and maintenance, sampling, characterization work, and meeting documentation requirements. It does not cover demolition and is specifically meant to reduce the risks of continued degradation until D&D can be funded in the future.

"Sometimes our work may seem counterproductive since, in some instances, we are roofing buildings we intend to tear down. But we have learned from our past experiences, especially with cleanup at the East Tennessee Technology Park (ETTP), that maintaining structural integrity is critical to preventing risks to humans and the environment and keeping these buildings safe for workers who will ultimately perform our cleanup operations," said Jay Mullis, OREM's Acting Manager.

At the November meeting of the Oak Ridge Site Specific Advisory Board (ORSSAB), Bill McMillan and Brian Henry, DOE Federal Portfolio Project Directors, gave an overview of OREM's priorities at ORNL and Y-12 for utilizing excess facilities funding in the current and near term.

FY16 Work Scope at ORNL

- **Building 7500**—Current work scope at Building 7500, the Homogeneous Reactor Experiment, focuses on removing combustibles, asbestos, and standing water in the basement of the building. The first activity funded with excess facilities appropriations in FY16 was the removal of combustibles. In addition to eliminating a fire hazard risk, this action allowed OREM to deactivate the heat detection system and save maintenance costs. Additional funding will be applied toward removing the asbestos and addressing the accumulation of water in the basement.
- **Building 3038**—A former isotope laboratory, Building 3038 contains glove boxes and radioactive isotopes and is classified as a Category 3 nuclear facility. Current work scope focuses on reducing the contamination level so the facility can be downgraded to a less hazardous rating as a radiological facility, which would reduce risks and simplify further surveillance and maintenance activities.
- **Building 3026**—Work performed included removing a wind enclosure from the former hot cell facility and sealing the roof. A tunnel connecting the hot cells was found to have water inside, possibly entering through the wind enclosure, so OREM is pumping out the water and characterizing the samples to determine the radiological content. The tunnel will be observed to determine if water continues to enter now that the roof has been sealed and to assess any further actions that might be necessary. The concrete pedestals for the hot cell foundations were enclosed in concrete to contain loose contamination and prevent potential runoff in rainfall.
- **Buildings 3028 & 3029**—Planned work scope includes fogging to fix loose contamination in hot cells to reduce worker hazards and make future remedial actions in the buildings easier to perform.

FY16 Work Scope at Y-12

- **Biology Complex**—The complex has been inactive for more than a decade and is deteriorating. Airborne risks like asbestos, mold, and animal droppings have a major impact on worker safety. Before the Biology Complex can be demolished, characterization to determine the exact nature of the inventory and extent of contamination is necessary.
- **Alpha 4**—Alpha 4 is a nuclear facility containing hazardous materials, such as mercury and asbestos. Although deteriorating, the building remains in stable condition. A new roof and additional repairs, funded with FY16 plus-ups, will help maintain Alpha 4 in good condition for the next five to ten years.
- **COLEX**—A column exchange (COLEX) process was used to supply the mercury feed for operations at Alpha 4, and the large equipment used for that process is stored outside of the building. The COLEX equipment has some mercury contamination and continues to rust and degrade. Characterization of the equipment on the west side of Alpha 4 is being performed now to determine the waste disposal pathway. Sealing work will also be performed to prevent an environmental release from the rusting out of equipment. Processing equipment on the east and south side of Alpha 4 will also be addressed as funds are available.

ORSSAB Now Recruiting New Members for Appointment in 2017

What is the Oak Ridge Site Specific Advisory Board?

ORSSAB is one of the eight local Site Specific Advisory Boards that were developed at major DOE sites to involve the public more directly in the DOE environmental cleanup process.

ORSSAB provides DOE with advice and recommendations concerning environmental remediation, waste management, monitoring and surveillance of legacy waste, and other issues.

The board meets eight months of the year to hear from DOE personnel about the status of various cleanup projects, discuss recommendations on cleanup issues, and conduct board business. The board's Environmental Management/ Stewardship (EMS) Committee meetings during those months serve as a forum for more in-depth presentations and informal discussions on cleanup topics. Members of the public are encouraged to join the committee and actively participate and vote on committee business.

Board meetings are held the second Wednesday of the month from 6:00 to 8:00 p.m. The EMS Committee meets the last Wednesday of the month from 6:00 to 7:30 p.m.

What are Member Responsibilities?

Board members attend the monthly meetings and serve on the board's EMS Committee. They work on recommendations on environmental cleanup issues and participate in tours of cleanup sites to gather firsthand insights into the various projects and the challenges associated with them.

Who Serves on ORSSAB?

The board has up to 22 members and 2 students, chosen to reflect the diversity of gender, race, occupation, and interests of persons living in counties near the Oak Ridge Reservation. Technical expertise is not required for membership, as a broad range of backgrounds and viewpoints is preferred.

Interested in Becoming a Member?

Call the ORSSAB offices at (865) 241-4583 or e-mail Pete.Osborne@orem.doe.gov. Or visit our website at www.energy.gov/orssab for additional information about the board.

APPLICATION DEADLINE – JANUARY 31

Recent Recommendations

Complete text of all board recommendations and DOE responses are available on the board's website at energy.gov/orssab.

Recommendations on the Proposed EM Disposal Facility

Oak Ridge is home to three large industrial sites—ETTP, Y-12, and ORNL—each with numerous buildings, burial grounds, soils, and other contaminated media resulting from waste streams generated during the Manhattan Project and Cold War era.

OREM manages the cleanup of legacy waste on the Oak Ridge Reservation (ORR) under federal regulations established in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as the Superfund Act. CERCLA wastes from OREM cleanup activities at local sites are largely disposed in an existing OREM landfill near Y-12 known as the Environmental Management Waste Management Facility (EMWMF).

EMWMF has accepted CERCLA waste since 2002, but its capacity to accept waste will be exhausted by the early 2020s. DOE estimates that additional capacity for approximately 2.5 million cubic yards of waste will be needed through the year 2046.

In December 2010, DOE first announced that additional CERCLA waste disposal capacity on the ORR would be necessary because of the expansion of OREM scope in the years since construction of EMWMF began. This need for additional capacity is primarily due to the expansion of the OREM program in recent years to include the removal of outdated facilities at ORNL and Y-12.

DOE has proposed a new disposal area, named the Environmental Management Disposal Facility (EMDF).

ORSSAB began discussing the need for additional CERCLA waste disposal capacity on the ORR at its December 2010 EM & Stewardship Committee meeting and has continued to follow developments on that topic. ORSSAB has issued previous recommendations to DOE on EMDF in 2011 and in 2014.

In May 2016, DOE provided ORSSAB with an update on planning for CERCLA waste disposal capacity at its monthly board meeting and at its EM & Stewardship Committee meeting. The following recommendations were generated from discussions at those meetings.

ORSSAB supports onsite disposal of OREM CERCLA wastes that meet the onsite waste acceptance criteria. In addition to its prior recommendations, ORSSAB wishes to include the following:

1. Continue with planning for additional on-site disposal capacity for low-level radioactive and chemically hazardous contaminated waste.
2. Continue efforts to minimize the need for additional on-site capacity by using lessons learned and operational and disposal efficiencies from operation of EMWMF. This should consider all volume reduction possibilities.
3. Consider using contaminated soils authorized for disposal at the EMDF as fill instead of clean fill, which decreases disposal capacity for contaminated materials.
4. Consider methods for expanding EMWMF capacity as a way to assure the smallest possible footprint for the new disposal facility.
5. Ensure that the proposed disposal facility will have sufficient capacity to accept all appropriate future generated waste from DOE activities through cleanup of the ORR.
6. Ensure that the proposed facility is engineered to operate safely and that migration of contaminants into adjacent groundwater, soil, and air does not exceed environmental regulatory limits.
7. Locate the facility in proximity to existing waste burial grounds, if technically feasible, such that contaminated areas are consolidated on the ORR. Sites in Zone 2 and 3 at Y-12 are acceptable as options because they fit this criteria and are favorable in terms of transporting waste. The board does not support greenfield intrusion (e.g., Zone 1).
8. Ensure that a trust fund for long-term stewardship is established for any new disposal facility similar to that for EMWMF.

Spring SSAB Chairs Meeting Set for May

DOE announced in late December that the Spring 2017 SSAB Chairs Meeting will be held May 9–11 in Paducah, Kentucky. The meeting will be hosted by the Paducah Citizens Advisory Board (one of the eight SSABs across the country) and the DOE Paducah Field Office.

Board leadership from Paducah, Oak Ridge, and the other SSABs meet semiannually with officials from DOE's EM program to discuss the recent successes and future challenges for the program. Topics include specific cleanup projects, waste disposition, future land use, and long-term stewardship at EM sites nationwide.

This meeting will likely focus on progress in reopening the Waste Isolation Pilot Plant in New Mexico as well as the new administration's priorities related to environmental cleanup.

The 2016 Fall Chairs Meeting was held August 30–September 2 in Las Vegas, Nevada, and was organized by the Nevada SSAB.

Reservation Update

Progress Continues at ETTP

Progress continues at the ETTP site following the successful accomplishment of Vision 2016, OREM's goal to demolish and remove all five of the uranium enrichment processing buildings in the former gaseous diffusion complex. The achievement was celebrated at the end of August as demolition operations concluded on the final Building K-27. OREM plans to clean up the ETTP site and transfer the property for use as a private sector industrial park.

Reindustrialization gains momentum at ETTP with the demolition of Building K-731.

Reindustrialization efforts will get a boost in FY17 as the transfer deed nears approval for the former Powerhouse, Duct Island, and K-1007-P1 Pond Area, which will release 662 of 1400 acres of land for private industrial use. Demolition work continues at the site to meet OREM's Vision 2020 and its near-term goal to remove all remaining facilities and structures in the uranium enrichment complex. Removal operations began at Building K-731 in August.

TRU Waste Processing Center Exceeds Goals

The Transuranic Waste Processing Center (TWPC), which processes and prepares transuranic (TRU) waste generated in Oak Ridge for offsite disposal, has exceeded year-end goals. In October the facility completed its first year under a new contract with North Wind Solutions. The contractor and its employees surpassed milestones established for processing two kinds of waste streams: contact-handled and remote-handled, terms which designate lower or higher radioactivity respectively and determine processing standards and safety precautions for handling TRU waste.

Demolition Begins at Hanford PFP

On the heels of OREM's success with the complete demolition and removal of all uranium enrichment processing buildings at ETTP in Oak Ridge, another large-scale EM demolition project is underway at DOE's Hanford, Washington, site. After nearly 20 years of preparation, demolition of Hanford's Plutonium Finishing Plant (PFP) is now underway. The PFP formerly produced more plutonium metal for nuclear weapons than any other facility in the county and was once considered "one of the most dangerous buildings in the DOE complex," according to EM's Assistant Secretary Monica Regalbuto. Demolition activities began in November and are expected to last approximately four months.

Demolition began at Hanford's Plutonium Finishing Plant in November.

WIPP Moves Toward Restart

The Waste Isolation Pilot Plant (WIPP) near Calsbad, New Mexico, is the nation's only repository for TRU waste. The facility has been closed temporarily since 2014 following two unrelated incidents, one involving a haul truck fire and the other a radiological release. Resuming waste emplacement operations at WIPP remains a top priority for DOE and its TRU waste generator sites around the country.

Several ceiling collapses in the last several months have kept a critical eye on WIPP's expected reopening. The final stages of reopening involve the completion of a DOE Operational Readiness Review and independent approval for reopening from the New Mexico Environmental Department. DOE completed the Readiness Review in December and identified 21 pre-start findings and 15 post-start findings. A corrective actions plan for the findings is being developed. Actions for all pre-start findings will need to be completed and independently verified prior to a reopening.

ORSSAB Members Tour Cleanup Sites for Close-Up Look at Projects

Board members have been busy in FY17. With the addition of new "issue mangers" to the board's FY17 work plan, ORSSAB has established individual and group leaders for the range of topics that will be covered by the board this year. Issue managers not only serve as discussion leaders and points-of-contact, but they also head the initiative for supplemental learning opportunities like site tours to engage ORSSAB's members with key topics in the field.

TWPC Tour

In October board members toured the Transuranic Waste Processing Center (TWCP) to learn more about transuranic waste in Oak Ridge and the work being performed by North Wind Solutions, the current cleanup contractor for TWPC. North Wind characterizes and packages transuranic, or TRU, waste generated on the ORR. TRU waste generally consists of clothing, tools, and other debris contaminated by transuranic elements. Though some small amounts of TRU waste continue to be generated by research activities at ORNL, the TRU waste processing mission largely addresses the waste generated during past nuclear research and operations in Oak Ridge.

ORSSAB members attending the November tour of excess facilities at ORNL and Y-12 included (from left) Rosario Gonzalez, Martha Deaderick, Dennis Wilson, Christopher Beatty, Fred Swindler, Venita Thomas, and Ed Trujillo.

Board members (from left) Venita Thomas, Martha Deaderick, Rosario Gonzalez, and Kathryn Bales tour TWPC.

Excess Facilities Tour

In November board members visited Y-12 and ORNL to examine several high-priority excess contaminated facilities on the ORR. Excess contaminated facilities are deteriorating buildings and structures, most vacant and unused for decades, that either already are or will ultimately become OREM's responsibility for future cleanup. Some of the worst of these facilities in DOE's nationwide inventory are in Oak Ridge, including Alpha 5 at Y-12, notoriously ranked as the "worst of the worst." In total, approximately 350 excess contaminated facilities are located on the ORR; some are owned by OREM, but others are operated by other programs including the National Nuclear Security Administration, Office of Nuclear Energy, and Office of Science. Current cleanup schedules estimate that many of these facilities will remain in place for another 10-15 years before demolition can begin. In the meantime, OREM is working to reduce risks and stabilize structures to prevent further degradation.

Board members were able to see firsthand some of the risk-reduction and stabilization work completed with FY16 funding. OREM was awarded a $28-million funding plus-up in FY16 earmarked for excess contaminated facilities. Board members observed roofing repairs on Alpha 4 at Y-12 and examined future work scope on the Biology Complex and COLEX equipment. At ORNL, the group visited "isotope row," a district of non-operational hot cell facilities on the central campus, and also examined Building 7500 to learn about completed and planned remedial actions.

ORSSAB's schedule in the new year will feature tours on DOE's groundwater strategy and waste disposal capacity.

Board Member Welcomed by Latin American Community in Oak Ridge

Thirty-five years ago, when Rosario Gonzalez moved from Mexico to Oak Ridge with her husband, Benito, she spoke no English and had two small children in tow with a third on the way. When Benito was offered a job with ORNL, the Gonzalez family left their close-knit community in Mexico and moved to Oak Ridge, where they knew no one and struggled with the language. Rosario was especially concerned about giving birth in an unfamiliar land and the sudden necessity of being able to communicate with English-speaking doctors.

Oak Ridge welcomed the young couple with open arms. Seeking out familiar ties, the Gonzalez's joined St. Mary's Church and formed lasting friendships with the Catholic community and others from Latin America. Rosario bonded with Mireya Carnes, a woman who immediately recognized the young mother's plight and helped Rosario navigate the new world, transporting her to all her doctor's appointments and serving as a translator. She was there when Rosario gave birth, and the two have maintained a deeply-rooted friendship.

The Gonzalez family thrived in Oak Ridge. The young children flourished in foreign culture and learned the new language in months, speaking English to one another their mother could not yet understand. Rosario took English classes at her church, at Roane State Community College, and at the YMCA. She began volunteering at St. Mary's and eventually took a position serving food in the school's cafeteria. It was not long before she was promoted to manager, a position she has now held for 30 years. She greets all the new families and the children who start school at St. Mary's. "They are all my kids," she says. The children flock to Rosario, calling her "Miss Rosie." And whenever anyone comes to the community from Mexico, Rosario is there to take them to doctor's appointments, help with shopping, and accompany the newcomers on the various outings native speakers take for granted—paying forward those same comforts of community she found on arrival in Oak Ridge.

Board member Rosario Gonzalez with her grandchildren.

A warm and vibrant woman, Rosario is a natural caregiver. She raised three boys and a husband "on rice and beans," she says. Raising a family in Oak Ridge contributed to her interest in the environment and joining ORSSAB.

In the few months she has been with ORSSAB, she has taken up the charge of environmental stewardship, demonstrating keen interest in the responsibilities and challenges of environmental cleanup. Board meetings are new and unfamiliar territory. Rosario says she is shy and still getting used to government-speak and DOE's penchant for acronyms. "I learned English, but now I have to learn another new language," she joked. Site tours are more her speed. Rosario signs up for those immediately and has already joined in the two FY17 tours, one at TWPC and another that examined excess contaminated facilities at Y-12 and ORNL.

The walking tour at ORNL was especially meaningful to Rosario as a trip down memory lane during her husband's tenure at the lab. Benito is now retired from ORNL, but as a health physicist and later a radiological chemist, he had worked at many of the isotope facilities Rosario encountered for the first time on the tour. When the group toured "isotope row" and examined the now-defunct hot cell facilities, Rosario thought, "My goodness, he worked in here!" Benito had told her stories of smashing rocks to check radiation samples and using the glove boxes, often working alone on overtime in what are now ORNL's aging excess contaminated facilities.

The couple from that small town in Mexico now cherishes a community that spans across Latin America and the U.S. The Gonzalez's three sons, now adults with careers and kids of their own, live in various parts of the country: New York, Arizona, and Nashville. There are two grandchildren, both boys, and a third on the way, also a boy. Rosario and Benito also still have relatives in Mexico and Texas. The couple spends much of their free time traveling to see family and are always on the road, says Rosario. Despite the long distances, the Gonzalez's do not seem particularly road-weary, and their family network grows ever stronger even when stretched across the states. Her children take trips to remote places like Alaska and Iceland. Rosario wants to vacation in Cancun someday. "Traveling is just our way now," she said, but the couple has no plans to leave Oak Ridge. "We have lived and loved here for 35 years," Rosario explained. "This is our home."

Advocate
Oak Ridge Site Specific Advisory Board
January 2017

ORSSAB Welcomes Jay Mullis as New DDFO

DOE's Jay Mullis.

Recent administrative changes at OREM have brought new leadership to ORSSAB. **Sue Cange**, formerly OREM's manager, has relocated to EM Headquarters in Washington, D.C., to serve as the Principal Deputy Assistant Secretary for EM. **Jay Mullis** has assumed responsibilities as OREM's Acting Manager and will also now serve as the board's Deputy Designated Federal Officer (DDFO).

Board Chair Belinda Price expressed gratitude to Cange for her service to ORSSAB and welcomed Mullis to the board's proceedings in his new role. "On behalf of the board, Sue, we appreciate your dedication to the board and your support of our efforts over the years, and Jay, we have enjoyed working with you in the past, and we look forward to our interactions with you in your new capacity," said Price.

Mullis assumed responsibilities as the DDFO in October, fortuitously on the occasion of his scheduled presentation to the board on the "State of the EM Program in Oak Ridge." He formerly served as OREM's deputy manager.

Several other administrative changes have taken place among DOE personnel familiar to ORSSAB.

Dave Adler, ORSSAB's Alternate DDFO, has been promoted to the Director of OREM's Quality and Mission Support Division. He will oversee two major branches of operations focused on quality assurance and regulatory and environmental compliance.

Melyssa Noe, ORSSAB's Alternate DDFO, will serve as the Acting Chief for OREM's Program Support Branch. She will manage a variety of programs focused on regulatory and environmental compliance, facility management, reindustrialization and development of ETTP, and public outreach.

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UPCOMING MEETINGS

ORSSAB Board Meeting
Wednesday, January 11, 6 p.m.

EM & Stewardship Committee Meeting
Wednesday, January 25, 6 p.m.

Unless otherwise noted—
Meetings are held at the DOE Information Center
1 Science.gov Way, Oak Ridge, Tennessee 37831

ABBREVIATIONS

DOE — Department of Energy
EM — Environmental Management
EPA — Environmental Protection Agency
ETTP — East Tennessee Technology Park
OREM — Oak Ridge Office of Environmental Management
ORNL — Oak Ridge National Laboratory
ORR — Oak Ridge Reservation
ORSSAB — Oak Ridge Site Specific Advisory Board
TDEC — Tennessee Department of Environment and Conservation
Y-12 — Y-12 National Security Complex

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