



Oak Ridge Site Specific Advisory Board

FY 2016

ANNUAL REPORT



A Message from the Chair



It is my pleasure as Chair of the Oak Ridge Site Specific Advisory Board to present the board's FY 2016 Annual Report.

The board's mission is to provide independent advice and recommendations to the Department of Energy on its environmental cleanup program to remedy the Oak Ridge Reservation of hazardous and radioactive wastes leftover from the Manhattan Project and the Cold War era.

FY 2016 was a very productive year for the board in many ways. A key effort was hosting the semiannual EM SSAB Chairs' meeting in the spring, which brought together officials from DOE Headquarters and members from each of the eight site specific advisory boards that comprise the EM SSAB to discuss issues common to the sites. We studied and weighed in on some very important issues, such as groundwater, mercury, and the proposed Environmental Management Disposal Facility. We also welcomed a very diverse group of 10 new members this year. And we had a bit of fun helping DOE celebrate a major milestone in Oak Ridge cleanup as it fulfilled "Vision 2016"—a decade-long effort to demolish and remove the uranium enrichment processing buildings at the East Tennessee Technology Park (see Pages 5 and 8 for more on this key accomplishment).

The board continued the efforts begun the previous year to streamline its work plan so that topics for board review can be addressed in a focused fashion. Topics are presented at the main board meeting, and then members are invited to get an up-close look at what was discussed by touring projects in the field. More in-depth discussion then takes place during the board's Environmental Management & Stewardship Committee meeting at the end of the month. This process has proven extremely effective in helping educate members about the various Environmental Management projects.

This year we also began a more direct effort to get members involved in the recommendation writing process by strengthening our issue manager program. Members were asked at the beginning of the year to sign up for specific topics of interest. This allows them to focus their efforts and helps spread the board's work load.

I hope you find this report informative and helpful in your understanding of the board and its place in the decision-making process for DOE in its cleanup and stewardship responsibilities for the Oak Ridge Reservation.

We always welcome input from members of the public on environmental management and stewardship activities on the Oak Ridge Reservation. We provide a public comment period at each meeting for stakeholders to express their views. The board meets the second Wednesday of most months at 6 p.m. at the DOE Information Center, 1 Science.gov Way, Oak Ridge, Tenn. Any changes of location are publicized well in advance of the meeting. Join us!


Belinda Price, Chair

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MISSION STATEMENT

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

On the cover: The photos are a sampling of some of the many activities ORSSAB members participated in during FY 2016: top, the board's annual meeting; bottom left, celebrating the final demolition of the K-27 Building; bottom right, touring the Aquatic Ecology Lab at Oak Ridge National Laboratory.



Introduction

The Oak Ridge Site Specific Advisory Board (ORSSAB) is a federally appointed citizens' panel that provides independent advice and recommendations to the Department of Energy's Oak Ridge Environmental Management (OREM) Program. Chartered under the Federal Advisory Committee Act, the board began its work in 1995. ORSSAB is one of eight site specific boards across the nation that comprise the EM SSAB.

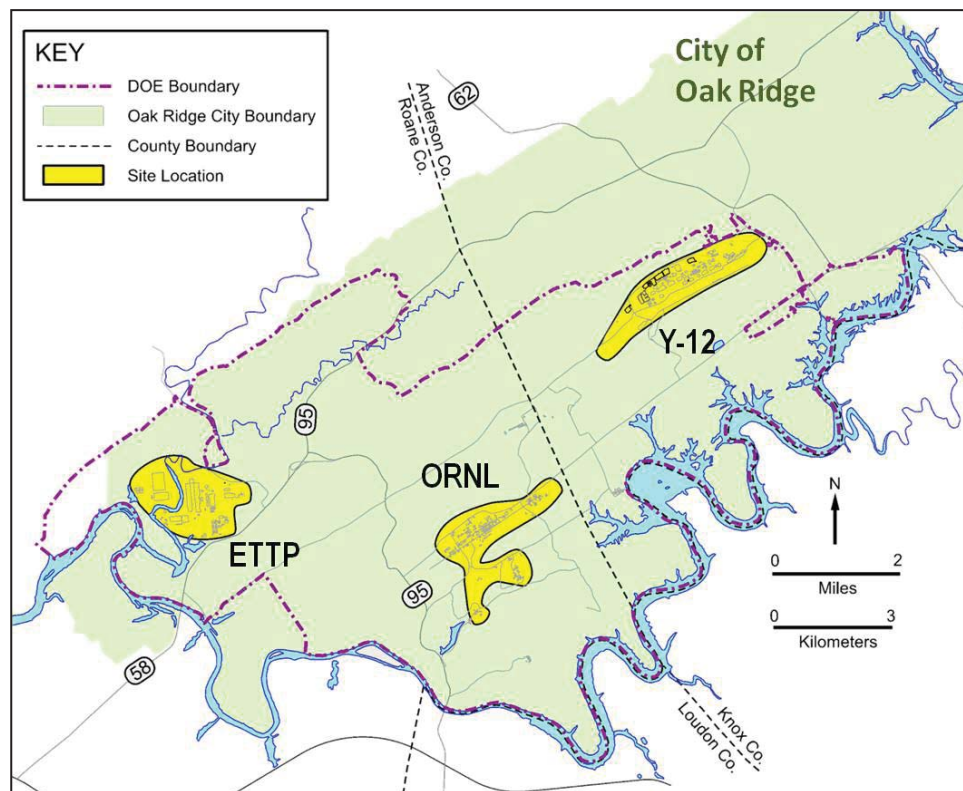
The board provides informed recommendations and advice to the DOE EM program regarding environmental restoration and waste management, as well as long-term stewardship, land use, and economic development.

Recommendations regarding environmental justice, health and safety issues, historic

preservation, and other issues may be developed at the request of the DOE Assistant Secretary for EM or the OREM Manager.

The board is committed to reflecting the concerns of the communities impacted by EM activities on the Oak Ridge Reservation (ORR) and serving as a communications link between the public and relevant government agencies, including local governments.

The board is composed of up to 22 members, chosen to reflect a diversity of gender, race, occupations, views, and interests of persons living near the ORR. Members are appointed by DOE and serve without compensation. Members may serve three two-year terms. At the close of Fiscal Year (FY) 2016, the



This map shows the location of the Oak Ridge Reservation and its relationship to the City of Oak Ridge. The reservation is almost entirely within the city limits of Oak Ridge. It also shows the three main plants of East Tennessee Technology Park, Oak Ridge National Laboratory, and Y-12 National Security Complex.

board consisted of 21 voting members from five counties: Anderson, Blount, Knox, Loudon, and Roane. It also included two non-voting high school student representatives.

Non-voting liaisons include representatives from DOE, the U.S. Environmental Protection Agency Region 4 (EPA), and the Tennessee Department of Environment and Conservation (TDEC). These liaisons advise the board on their agencies' policies and views.

ORSSAB provides a number of avenues for the public to learn about and express views on DOE Oak Ridge EM work. All board and committee meetings are open to the public and are announced in newspaper advertisements and at the DOE Information Center in Oak Ridge at 1 Science.Gov Way, 865-241-4780. Board meetings are also advertised in the Federal Register.

The first hour of board meetings is video recorded and broadcast on local cable television stations. It is also available on YouTube at www.youtube.com/user/ORSSAB. Copies of the meeting videos are available by calling the ORSSAB support office at 865-241-4583 or 865-241-4584.

The board maintains a web site at www.energy.gov/orssab. Information is also available by calling the ORSSAB support office.

Board Meetings

The board meets most months to hear presentations by personnel working on relevant EM topics, listen to and discuss input from concerned citizens, consider recommendations to DOE, and conduct other

business. Each August, board members have an annual meeting to evaluate the board's work for the year and plan activities for the next fiscal year.

The board conducts its deliberations under ORSSAB bylaws and Robert's Rules of Order and strives to consider all relevant positions in reaching decisions.

Committees

For FY 2016 ORSSAB had two standing committees. General board business is handled at the monthly Executive Committee meeting, which is composed of the elected officers of the board and the chair of the Environmental Management & Stewardship Committee (EM&S). The Executive Committee holds general administrative authority to set board agendas, coordinate the work of the EM&S Committee, and transact business as necessary.

EM&S is responsible for monitoring the major cleanup activities on the ORR and any associated stewardship requirements for areas of the reservation that have waste remediated in place. It originates recommendations to be considered at full board meetings. All board members are part of this committee.

The Executive and EM&S Committees usually meet monthly, and all meetings are open to the public. More detailed information about the committees are found in the "Committees" section of this report.

FY 2016 Board Officers

ORSSAB officers for the year were Belinda Price, Chair; Alfreda Cook, Vice Chair; and Dave Hemelright, Secretary.

The Year's Top News

October 2015

Panelists Update Workshop Participants on Waste Isolation Pilot Plant Recovery

A National Cleanup Workshop panel provided an update on the Waste Isolation Pilot Plant (WIPP) recovery. WIPP has been closed since February 2014 when two isolated incidents — an underground truck fire and release of radioactive contamination — occurred. The site in New Mexico is the disposal location for DOE's transuranic waste.

EM Acting Associate Principal Deputy Assistant Secretary Frank Marcinowski and Phil Breidenbach, president and recovery manager of Nuclear Waste Partnership, the management and operations contractor at WIPP, said there had been significant progress on corrective action plans required by the DOE Accident Investigation Board.

Old Reactor Pool Drained at ORNL

UCOR, DOE's cleanup contractor in Oak Ridge, began draining the pool of Oak Ridge National Laboratory's (ORNL) Research Reactor. Draining was one of the last stages of a project to resolve a leak in the 125,000-gallon pool.

The reactor had been shut down since the late-1980s, but water remained in the pool to provide shielding for radioactive components stored there. Most of the components were removed, and a concrete cap was placed on top of the pool. The leak was discovered in 2014.

November 2015

DOE Says Mercury Concentrations in East Fork Poplar Creek Have Declined in Recent Years

DOE said in November that mercury discharges at the Y-12 National Security Complex into East Fort Poplar Creek have declined in recent years. The decline was attributed in part to a Recovery Act-funded project in 2011 that cleaned out and repaired the plant's storm sewer system.

According to DOE estimates, Y-12 discharges about 3.7 grams of mercury per day into the creek, which translates to a concentration of about 840 parts per trillion at the point where the creek leaves DOE property. But that still exceeds the 51 parts per trillion to meet Clean Water Act compliance.

Federal Officials Establish the Manhattan Project National Historical Park

DOE and the Department of Interior, which includes the National Park Service, formally established the Manhattan Project National Historical Park during a ceremony in



Ed Westcott shot the famous photo on the left in August 1945. The photo was recreated when the Manhattan Project National Park was established. Mr. Westcott is holding the "War Ends" newspaper, bottom right.

Washington, D.C. The unique park will consist of three locations - Oak Ridge, Los Alamos, N.M., and Hanford, Wash. In Oak Ridge, the park will include the footprint of the former K-25 Building, a giant building that enriched uranium; the Graphite Reactor at ORNL, a pilot facility to test the feasibility of producing plutonium on a larger scale; and



One of the images from the K-25 Virtual Museum.

Building 9731 and Building 9204-3 (Beta 3) at Y-12. The two Y-12 buildings also enriched uranium.

DOE unveiled its K-25 Virtual

Museum, an online exhibit that features photographs and in-depth information on the origins of the plant and its missions, as well as oral histories from some of the people who worked at the plant during and after the Manhattan Project.

Local Governments Express Concern on Proposed Waste Disposal Facility

The Oak Ridge City Council and the Anderson County Commission expressed concerns over a proposed additional waste disposal facility being built near an Oak Ridge residential area. The governing bodies passed resolutions saying the facility could adversely impact the perception of the area. The city indicated that DOE should pay the city more money if the facility is built nearby.

Later in the month TDEC stated a number of concerns about the proposed location and preliminary design of the site.

December 2015

UCOR Finishes Reactor Project

DOE's cleanup contractor UCOR finished draining the pool of the Oak Ridge Research Reactor and shipped remaining contaminated

contents offsite. A leak from the pool was discovered in September 2014.

The reactor is scheduled to be deactivated and demolished, along with other small reactors at ORNL, in the 2030s.

January 2016

Oak Ridge Receives Additional Federal Funding for Cleanup

When the FY 2016 federal budget was announced in January OREM received \$473.8 million, up significantly from the 2015 spending level of \$430 million and well above the President's initial request of about \$365 million.

February 2016

Demolition of K-27 Begins

Demolition of K-27, the last of five gaseous diffusion facilities to be torn down at the



East Tennessee Technology Park (ETTP), began February 8. Deactivation of K-27 was completed in January. K-27's takedown marks the first-ever demolition and cleanup of a gaseous diffusion complex anywhere.

March 2016

Environmental Assessment for Oak Ridge Airport Finds No Significant Impact

An environmental assessment completed for the transfer of 170 acres at ETTP for a general

aviation airport found no significant impact to the area.

Plans call for starting construction on the airport in 2018. Estimates to build it are between \$30 million and \$40 million.

The airport would have a 5,000-foot runway that would accommodate general aviation aircraft including corporate jets, private airplanes, and emergency medical services aircraft. The airport would be on the south side of ETTP along Oak Ridge Turnpike (State Route 58).

April 2016

First Phase of Switchyard Cleanup Completed

OREM completed the final shipment of material from the first phase of its demolition and cleanup of the K-732 Switchyard at ETTP.



Completion of this project comes after months of disassembling, removing, recycling, and disposing electrical equipment from the switchyard.

ORSSAB Hosts EM SSAB Chairs' Meeting

More than 60 participants from across the country traveled to Oak Ridge to attend the EM Site Specific Advisory Board 2016 Spring Chairs' Meeting.

The meeting featured two of EM's top officials, Principal Deputy Assistant Secretary Mark Whitney and Site Restoration Deputy

Assistant Secretary Mark Gilbertson. The agenda included a tour of the ORR, an EM program update, news on recovery efforts at WIPP in New Mexico, and discussions centered on issues of site restoration, reindustrialization, and land use. (see Activities in this report).

May 2016

DOE Hosts Community Workshop on Priorities for Cleanup Funding

OREM held its annual community workshop to present priorities for funding and receive input from stakeholders. The event always precedes OREM submitting its budget request to DOE Headquarters two years in advance.

Susan Cange, OREM Manager, discussed cleanup priorities, near-term priorities, and budget. She spent much of her presentation explaining how OREM is preparing for its Vision 2024, which included:

- Planning for waste disposition,
- Design and construction of a mercury treatment facility at Y-12, and
- Preparing excess facilities for future demolition.

After Ms. Cange's presentation, Dave Hemelright, ORSSAB Secretary, presented the board's recommendation on the OREM's FY 2018 budget request (see Key Issues).



ORSSAB Chair Belinda Price, right, and Vice Chair Alfreda Cook at the Spring EM SSAB Chairs' Meeting in Oak Ridge.

WIPP One Step Closer to Reopening with Completion of Safety Analysis

DOE completed its Documented Safety Analysis bringing the reopening of WIPP one step closer.

The document is required by DOE where WIPP details potential scenarios, like fire or radiological releases, and the plan of action that will be taken should a situation arise.

Approval of the document allows the team at WIPP to complete the final phase of the Independent Verification Review and begin training workers on the new safety document.

After training, cold operations begin during which workers will conduct normal waste emplacement procedures using weighted waste containers.

Radiation Levels Down at Oak Ridge Sewer Plant

DOE announced that radiation levels at the Oak Ridge Sewer Plant had been reduced about 90 percent over the last two years.

Technetium was discovered in the sewer system in early 2014 prompting a number of actions to address the problem. The technetium was traced to the former K-25 Building, where demolition activities allowed the element to infiltrate pipelines that lead to the sewer plant.

June 2016

DOE Inspector General Questions Costs Incurred by Cleanup Contractor

The DOE Office of Inspector General raised questions about hundreds of thousands of dollars of costs incurred by DOE's Oak Ridge cleanup contractor UCOR, but the company said it resolved all of the issues before the report was made public.

The report also said more than \$250 million in subcontractor costs had not been audited for the first three years under UCOR's leadership and those, too, were considered unresolved until the audits were completed. UCOR said all planned subcontract audits for FYs 2011-2016 would be completed by the end of the year.

WIPP Begins Cold Operations

Workers at WIPP began cold operations where employees practiced normal activities in preparation for the plant's planned start-up by the end of the year. Cold operations also determine the adequacy of procedures and that all equipment is fully functional.

July 2016

ORNL Researchers Develop Method to Detect Genes That Convert Mercury to Toxic Form

Researchers at ORNL announced they developed probes that can detect genes required to convert mercury in the environment into toxic methylmercury.

In 2013 researchers reported they had discovered two genes that transform inorganic mercury into the highly toxic organic form. Development of the probes advances research to protect human health. Locally the new technology could help ongoing remediation efforts in East Fork Poplar Creek, which continues to have elevated levels of methylmercury.

August 2016

OREM Receives Achievement Award for Historic Preservation

The Advisory Council on Historic Preservation presented its Chairman's Award for Achievement in Historic Preservation to OREM.

OREM was recognized for its support of the Alexander Inn rehabilitation project. The inn, originally known as the Guest House, dates back to the earliest days of Oak Ridge.

Despite being on the National Register of Historic Places, the inn had fallen into disrepair. OREM provided \$500,000 to



purchase and stabilize the structure until it could be transferred to a private developer.

Demolition of K-27 Completed

On August 30, national, state, and local officials joined nearly 1,500 employees to watch the final wall of the K-27 Building fall

at ETTP, marking the first time in world history that all of a site's uranium-enrichment gaseous diffusion buildings had been cleaned and demolished.

K-27 was the fifth and final gaseous diffusion building to be demolished at the site.

Dignitaries in attendance included U.S. Senator Lamar Alexander, Congressman Chuck Fleischmann, DOE Assistant Secretary for EM Dr. Monica Regalbuto, U.S. Environmental Protection Federal Facilities Restoration and Reuse Office Director Charlotte Bertrand, and TDEC Commissioner Bob Martineau.

September 2016

OREM/ORSSAB Participate in National Cleanup Workshop

Leadership from both OREM and ORSSAB participated in the 2016 National Cleanup Workshop in Alexandria, Va. The event, hosted by the Energy Communities Alliance, brought together more than 500 attendees from DOE, contractors, state and local government officials, tribal leaders, community stakeholders, and advisory groups.



The demolition of K-27 at ETTP marked the historic end of an effort to remove all gaseous diffusion buildings from a single site.

Key Issues

In FY 2016, the board sent three locally generated recommendations to DOE. In addition it endorsed a recommendation developed by the chairs of the eight site specific advisory boards on supplemental environmental projects

Full text of the recommendations and responses is available on the ORSSAB website at <http://energy.gov/orem/listings/orssab-recommendations-responses>.

Recommendations on the Preferred Alternative for the Proposed Plan for Water Treatment at Outfall 200 at Y-12

Mercury contamination at the Y-12 National Security Complex has been a persistent problem for decades and is widespread in soil, sediment, surface water, and groundwater, in and underneath buildings, drains, and sumps.

DOE's objectives for mercury cleanup at Y-12 are to reduce mercury in surface water and stabilize and eliminate mercury in the soils.

One of the solutions is to reduce mercury leaving Y-12 via surface water.

In July 2015 OREM issued a Proposed Plan for Water Treatment at Outfall 200 Under the Record of Decision for Phase I Interim Source Control Actions in the Upper East Fork Poplar Creek Characterization Area (DOE/OR/01-2661&D2). The proposed plan describes several alternatives for constructing a water treatment plant at Outfall 200 where the creek originates.

DOE's preferred alternative is to build a water treatment plant at Outfall 200 with 3,000 gallons per minute treatment capacity and 2 million gallons of stormwater storage to hold overflow during a large rainfall event so the captured water can be treated later.

ORSSAB's recommendation endorsed DOE's preferred alternative. DOE thanked the board for its recommendation and said it was working on a draft record of decision that will select the preferred alternative for the remedial action.

EM SSAB Chairs' Recommendation on Supplemental Environmental Projects

ORSSAB signed off on a recommendation crafted by the eight chairs of the EM SSAB in the DOE complex regarding supplemental environmental projects (SEPs). SEPs are defined as environmentally beneficial projects that violators voluntarily agree to undertake in settlement of an enforcement action but which is not legally required by law.

The chairs wrote that DOE EM sites with legacy waste waiting for offsite disposal have been, or could be, subject to fines from regulatory agencies for failure to meet legally mandated deadlines for permanent disposal.

They said payment of fines reduces the ability of cleanup sites to meet cleanup goals. The recommendation stated 'in most cases states have the option to use the funds collected on fines for work unrelated to the issues that led to the fine or for the direct benefit of residents of the affected area.'

The chairs wrote that a more effective use of funds would be to use the money from fines to fund SEPs 'given that EM funding ...for EM work should be used to protect and/or improve the health and environment of the citizens of the geographic area and population affected by the previous disposal of legacy wastes.'

The chairs recommended that 'in lieu of fines and penalties that could be required and instituted at the respective facilities, DOE EM should consider SEPs as beneficial and amenable means to help accomplish

the legally mandated cleanup goals at DOE facilities.'

Recommendation on the Final Proposed Plan for Soils in Zone 1 at ETPP

At its January meeting, ORSSAB approved a recommendation to DOE on its Final Proposed Plan for Soils in Zone 1 at ETPP (DOE/OR/01-2648&D3).

The board recommended approval of DOE's preferred alternative for soil remediation in Zone 1 with the caveat that it may be premature because surface and groundwater remediation has been deferred that may require additional soil remediation in the future.

ETPP is divided into two environmental cleanup areas: Zones 1 and 2. The perimeter of the site, Zone 1, encompasses the area used historically for light industrial and waste management activities. Zone 2 included the enrichment process buildings and auxiliary facilities.

Much cleanup of Zone 1 was completed under an Interim Record of Decision signed in 2002. However, the goal to make Zone 1 suitable for unrestricted industrial use was not met in all areas because of unforeseen levels of contamination in soils. The proposed plan identifies the remedial action objectives (RAOs) proposed by DOE to complete the cleanup of soils.

The proposed RAOs are to:

- Provide for the use of the majority of Zone 1 as a future industrial site.
- Protect local-level terrestrial wildlife receptor populations from contamination in surface soil.
- Protect underlying groundwater and nearby surface water from contamination in soil.

DOE's proposed plan offered four soil remediation alternatives:

1. No action.
2. Remove small ecological risk areas (within Duct Island East/West and K-901 Drainage Area) and provide additional land use controls/cover for K-770, Contractor's Spoils Area, K-720, and Duct Bank areas.
3. Remove K-770 and small ecological risk areas, and provide additional land use controls/cover for Contractor's Spoils Area, K-720, and Duct Bank areas.
4. Remove K-770, K-720, and small ecological risk areas, and provide additional land use controls/cover for the Contractor's Spoils Area and Duct Bank areas.

Alternative 2 is DOE's preferred remedy. ORSSAB's EM & Stewardship Committee reviewed the proposed plan, participated in a tour of Zone 1, and heard multiple presentations by project representatives regarding proposed soil remediation strategies and the expected outcome.

The committee drafted a recommendation on the plan and sent it the full board for consideration.

Based on the committee's draft, ORSSAB recommended approval of the proposed plan's Alternative 2 with the inclusion of the following assurances:

- Final remediation of Zone 1 soils will meet environmental standards that support and promote economic development.
- Final proposed plan will include a concise description of "unrestricted industrial use" vs. "recreational use" such that a reader clearly understands what activities can/cannot be performed in the designated area.
- Summary of the Oak Ridge Reservation Land Use Control Assurance Plan (DOE 1999) will be included in the final proposed plan to benefit readers when considering whether assurances are adequate, and
- Development of a land use control implementation plan prior to approval

of the final proposed plan will be considered.

DOE has issued a preliminary response to ORSSAB's recommendation, thanking the board for its comments. A formal response to the board will follow if DOE incorporates ORSSAB's recommendations into its final proposed plan.

Recommendation on the FY 2018 OREM Budget Request

Each year the DOE EM program develops its budget request two years ahead of the current fiscal year, incorporating requests from field offices into the overall EM program budget request that is submitted to the president.

In spring 2016, OREM briefed ORSSAB on the Oak Ridge budget and described near-term and long-term priorities, broadly grouped into program "visions":

Vision 2016—An effort to complete the demolition and removal of all five gaseous diffusion buildings at ETTP by the end of 2016.

Vision 2020—An initiative to extend Vision 2016 to include cleanup of all facilities at ETTP and prepare to release the land for reindustrialization by the end of 2020.

Vision 2024—The transition from cleanup at ETTP to address the mercury contaminated facilities at Y-12.

With respect to the intricacies of sequencing and prioritization, the board believed the following recommendations would have minimal impact on the overall budget and

should be incorporated into OREM's FY18 budget request.

- The design and construction of the Y-12 Outfall 200-Mercury Treatment Facility could be accomplished in FY16–18 by using some funding for the second half of FY16 and FY17 from plus ups. Also, the board recommended including additional funds in the FY18 budget request.
- Rather than waiting for the completion of decontamination and decommissioning of above-ground structures, additional, although minimal, funding could be identified in the FY18 budget request for more in-depth groundwater activities at select locations, particularly to address questions related to offsite contaminant migration.
- The increased activity would yield data that would benefit the out-year groundwater efforts, help address unanswered questions, and dispel current perceptions of inactivity on this important aspect of environmental media.

In its response to the board OREM noted that in regard to the Mercury Treatment Facility it is a line item construction project and only funds specifically designated by Congress can be used on the project.

Regarding the board's recommendation for more in-depth groundwater activities, OREM said it has and will continue to request funding for additional collection and analysis of data to support groundwater and surface water decisions. OREM noted that a groundwater treatability study was underway at ETTP.

Board Meetings

ORSSAB meetings are usually held the second Wednesday of the month at 6 p.m., at the DOE Information Center, Office of Science and Technical Information, 1 Science.gov Way, Oak Ridge, Tenn. Each meeting features a presentation like the ones described below. Board meetings also include regular business items, such as approval of recommendations and status reports from DOE, EPA, TDEC, and the ORSSAB committees. The public is always welcome to attend. Meetings are listed on the ORSSAB website at www.energy.gov/orssab.

October

For a number of years work has been underway at ETTP to remediate the site and turn it into a private commercial industrial Park. Portfolio Federal Project Director for ETTP Wendy Cain reported on the progress that has been made at the site and what remains.

She said the near-term vision for ETTP is to have all of the gaseous diffusion plant (GDP) buildings demolished by the end of 2016. At the time of her presentation four of the five GDPs had been demolished. Only K-27 remained and it was almost ready for demolition to commence.

Ms. Cain said even when all of the GDPs are gone several hundred smaller support structures need to be demolished.

In addition to the demolition of four GDPs, Ms. Cain noted other significant milestones toward the goal of an industrial park. They included the transfer of more 700 acres of land and 14 buildings from DOE to private entities and 20 private companies already in operation.

ETTP was the site of the K-25 GDP, which was a major site in the Manhattan Project, the massive wartime effort to develop an atomic weapon. K-25 was demolished several years ago, but its historical significance will be preserved. Ms. Cain said a professional design team and museum professional are working to design an equipment building that partially replicates the K-25 Building. A viewing tower

will overlook the U-shaped footprint of K-25, and a history center will be located on the second floor of the adjacent ETTP fire station.



Artist's concept of the planned Equipment Building at ETTP to commemorate the K-25 Building.

November

ORSSAB went on the road in November and held its meeting at Chuy's Restaurant in Knoxville, the purpose being to occasionally take meetings to the public at different locations.

Jason Armstrong, the Associate Director of the Operations Management Division for OREM, was the presenter for the meeting. His program was on ensuring safe operations of work being done on the ORR.

He talked about a number of major operations underway, such as the Transuranic Waste Processing Center, which processes and packages transuranic waste for disposal at WIPP in New Mexico.

At ETTP the primary work is decontamination, decommissioning, and demolition of old

buildings. The uranium-233 disposition is a project at ORNL that involves criticality, radiological, chemical, and industrial hazards.



Jason Armstrong, DOE, was the presenter at the offsite board meeting in November.

Waste management operations include transportation and disposition of waste from around the ORR, including classified and non-classified waste.

Mr. Armstrong said these and other operations are being done safely as safety is embraced by DOE and its prime cleanup contractor UCOR.

December

The board did not meet in December.

January

The board had three presenters to begin the new year.

Brian DeMonia, Branch Chief, Safety, Security and Waste Management, discussed “Environmental Management Waste Management,” and gave a broad overview of the various waste streams generated at ORR, along with the treatment and disposal options allowable for each type of waste.



ORSSAB had three presenters at the January meeting: left to right - Brian DeMonia, Bill McMillan, and Brian Henry.

Bill McMillan, Portfolio Federal Project Director for ORNL, discussed “Liquid, Gaseous, and Transuranic Waste Management at ORNL.” He explained that liquid gaseous waste operations at ORNL consist of approximately 64 facilities that treat liquid and gaseous waste

streams from OREM and the Office of Science.

Brian Henry, Acting Portfolio Federal Project Director for Y-12, discussed “Oak Ridge Reservation Y-12 Area Landfills.” Multiple landfills at Y-12 take ORR waste streams for industrial waste, clean construction waste, and demolition debris.

February

Groundwater strategy for the ORR was the topic of discussion at the February meeting. Dennis Mayton, DOE Groundwater Program Project Manager, highlighted the challenges of managing legacy contamination, the current groundwater assessments, and monitoring procedures across the ORR. Mr. Mayton’s presentation focused on two key program initiatives: offsite groundwater assessment and regional groundwater modeling.

March

Karen Thompson, Branch Chief for Planning and Baseline Management, talked about “FY 2018 DOE OREM Program Budget and Prioritization.” Her presentation provided a general overview of fiscal year planning and stages of budget development.

She explained that at any given time three federal budgets are in play:

- the current enacted budget (FY 2016);
- the President’s Budget Request (FY 2017);

- and the budget in development for FY + 2 (FY 2018).

Budget development typically takes an entire calendar year, and appropriations are likewise determined a year in advance. Thus, OREM's appropriations for FY 2018, being developed in FY 2016, will be included in the president's request in FY 2017 and will be enacted in FY 2018.

Ms. Thompson explained that OREM receives three different types of funding for its cleanup program. Appropriations are distributed for decontamination and decommissioning, defense, or non-defense funds. The funding categories are exclusive, and money can only be used on its designated category of cleanup.

April

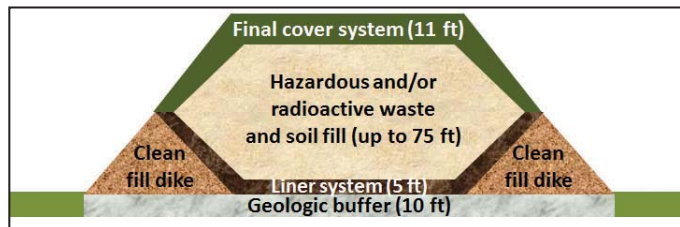
The board did not meet in April. ORSSAB hosted the EM SSAB Chairs' meeting. See The Year's Top News and Other Activities in this report.

May

Brian Henry returned in May to discuss OREM's interest in a new onsite disposal facility to meet the program's future cleanup goals. He described several site alternatives for the location of the proposed Environmental Management Disposal Facility (EMDF).

Much of the waste generated by cleanup operations at ETTP goes into the existing Environmental Management Waste Management Facility, which will reach capacity in a few years. The continuing cleanup at ETTP and the future cleanup of facilities at ORNL and Y-12 drives the need for additional waste disposal capacity. Both onsite and offsite options for waste disposal are being considered by DOE and its regulators at EPA and TDEC. The agencies are evaluating six alternatives:

- No Action (1). The no action alternative is a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requirement and is not expected to be selected.
- Onsite Disposal (2-4). Three options for onsite disposal are under consideration.
- Offsite Disposal (5). Offsite disposal would require the cross-country transport of waste to facilities in Utah and Nevada by both truck and rail.
- Hybrid Disposal (6). The hybrid disposal alternative would include a combination



This illustration shows the cutaway design of an engineered disposal facility similar to the one proposed for additional waste capacity on the ORR.

of a small onsite facility with additional offsite disposal at existing facilities.

DOE maintains no stated preference at this time and is evaluating all six alternative options. However, since offsite facilities are already in place, discussions of an onsite or hybrid alternative have generated more activity among DOE, EPA, and TDEC because the onsite options require the selection of a new landfill location.

A proposed plan is scheduled for release in the spring/summer of 2017. If the schedule holds the new facility would be operational 18-24 months before the current facility reaches capacity.

June

Mark Peterson, leader of the Aquatic Ecology Group in the Environmental Sciences Division

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

July

The board did not meet in July.

August

Board members and liaisons traveled to Townsend, Tenn., to the Tremont Lodge and Resort for the board’s annual meeting.

Board chair Belinda Price opened the meeting by reviewing the board’s mission statement and the purpose of the meeting:

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

DOE Oak Ridge Manager for EM Susan Cange and the board’s Alternate Deputy Designated Federal Officer Dave Adler talked about DOE’s three visions for ETTP:

- Vision 2016—The safe and successful demolition and removal of all five gaseous diffusion buildings at ETTP. Vision 2016 was on schedule for completion by the end of the month.
- Vision 2020—A goal to clean up the remaining portion of ETTP and reindustrialize the site.
- Vision 2024—An initiative to expand cleanup work to the Y-12 National Security Complex and address mercury contamination.

Ms. Cange also discussed some near-term priorities for the ORR. They included:

- Meet historic preservation commitments at ETTP.
- Complete direct disposition of the uranium-233 material at ORNL and begin the processing campaign.
- Complete contact- and remote-handled transuranic (TRU) debris processing.
- Construct and operate the TRU Sludge Test Facility.
- Complete planning for waste disposition and the preliminary design of a new EMDF.



Jenny Freeman, left, has facilitated several ORSSAB annual meetings. The board returned to Townsend for its FY 2016 meeting.

- Continue design and complete construction of the Mercury Treatment Facility at Y-12.
- Continue implementation of the Groundwater Strategy.
- Reduce risk and stabilize contaminated facilities and maintain critical infrastructure.

Ms. Price reviewed a number of accomplishments the board achieved during the past year. Some of those accomplishments included three recommendations to DOE,



ORSSAB members Mary Smaling and Christopher Beatty at the annual meeting.

hosting the EM SSAB Chairs’ Meeting in April, and participating in the 2016 Waste Management Symposium where Oak Ridge was the featured site.

Additional accomplishments are noted in the Other Activities section of this report.

DOE, EPA, and TDEC offered suggestions on topics the board might consider for the next fiscal year. Board leadership uses those suggestions to develop the board’s work plan.

Each agency had several suggestions, but common suggestions included sufficient waste disposal capacity for CERCLA generated waste and continued monitoring of groundwater efforts.

September

The board had another offsite meeting in Knoxville at the Olive Garden Restaurant.

Sherry Browder, reindustrialization manager for UCOR, outlined the path ahead for reindustrialization of ETTP. Site cleanup has been ongoing since 1989 and considerable progress has been made over the years. Decontamination and decommissioning activities followed by large-scale demolition and cleanup operations have dramatically altered the landscape of ETTP, bringing the site closer to reindustrialization.

OREM and UCOR celebrated the completion of Vision 2016, the final demolition and removal of all five uranium enrichment processing buildings once standing at the site. The last building (K-27) was demolished at the end of August. The accomplishment makes DOE’s Oak Ridge site the first in the world to successfully complete cleanup for all of its former uranium enrichment processing buildings.

The next milestone on the horizon is Vision 2020, a goal to complete cleanup of the entire ETTP site and transfer the land for reindustrialization.

During the board business portion of the meeting, the board elected officers for FY 2017: Belinda Price, chair; Dennis Wilson, vice chair; and Dave Hemelright, secretary.



Board members Venita Thomas, left, and Kathryn Bales, with TDEC liaison Kristof Czartoryski at another offsite meeting at the Olive Garden Restaurant in September. The meeting’s presenter Sherry Browder is in the background.

Committees

Executive

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 (EM&S). The committee holds authority to set board agendas, coordinate the work of the EM&S Committee, and transact business as necessary between regular board meetings.

The Executive Committee serves as the board's forum for initial discussion on issues involving the ORSSAB bylaws and operating procedures, annual meeting planning, and preparation of the board's annual work plan.

Environmental Management & Stewardship

This committee is responsible for monitoring the major cleanup activities on the ORR and any associated stewardship requirements for areas of the reservation that have waste remediated in place.

In FY 2016 the committee followed a number of issues.

Monitor Progress of Cleanup at ETTP

At the October board meeting Susan Cange, manager for OREM, did a presentation on the progress of cleanup at ETTP. The final end state for ETTP is for the site to be transformed into a commercial industrial park. Ms. Cange said while many old buildings have been demolished some demolition and soil remediation remains.

The week after the board meeting several committee members toured the site. Some of them later voiced concerns that the result of demolition and cleanup work made the area look like an 'industrial wasteland.'

Dave Adler, the board's Alternate Deputy Designated Federal Officer, said while DOE

EM is not responsible for beautification of a site, a number of things were being considered to make the site more attractive for potential commercial developers. Several entities would be involved to make ETTP more attractive including UCOR, the City of Oak Ridge, TDEC, and EPA.

Recommendation on the Final Proposed Plan for Soils in Zone 1 at ETTP

Related to the cleanup of ETTP, the committee drafted a recommendation on the Final Proposed Plan for Soils in Zone 1 at ETTP.

The committee agreed with DOE's preferred alternative for soil remediation in Zone 1, which is the removal of small ecological risk areas and provision of additional land use controls for certain areas.

For a complete description of the recommendation see the Key Issues section of this report.

Proposed New Waste Disposal Area

While cleanup of ETTP is expected to continue until the 2020s, future cleanup of ORNL and Y-12 will generate even more waste. The question is where to put it.

A number of options are being explored including another onsite disposal site (or sites), shipping offsite, or a combination of both.

Of the onsite disposal options, the area considered the most viable is in Bear Creek Valley near Y-12. Within Bear Creek Valley three locations are possibilities.

The East Bear Creek Valley Site is near the existing EM Waste Management Facility, which is already designated for waste management.

The second option is West Bear Creek Valley, but it is in a 'greenfield' area that has not been used previously for waste management.

The third option is a site between the two. An onsite disposal location would be known as the EM Disposal Facility (EMDF).

In January several members of the committee toured the area to see for themselves where the proposed locations are situated.

The committee discussed whether it should make a recommendation on all of the waste disposal options. Mr. Adler advised the committee to postpone a recommendation until better data are available and a formal presentation has been made by DOE, hopefully with support from EPA and TDEC. Mr. Adler noted that a feasibility study had not been completed that would also aid the committee in formulating a recommendation.

In May DOE provided another presentation to the full board on the need to find a pathway for additional waste and reviewed the options for onsite disposal. At the following EM&S Committee meeting Mr. Adler presented the committee with two main considerations regarding a potential recommendation on EMDF.

One would be whether or not to have an onsite disposal facility. Two, if the board supports an onsite disposal option, recommendations as to the preferred location would be beneficial.

While the committee had a detailed discussion of a possible recommendation it chose not to take any action until issue managers for EMDF, some of whom were not in attendance, could participate in the discussion.

Groundwater Management

A strategy for managing groundwater began in 2013 when DOE, EPA, and TDEC held a series of workshops that identified 35 suspect groundwater plumes as projects to consider for possible remediation. As a result DOE launched the Groundwater Strategy Program in 2014, which prioritizes and investigates plumes to determine what actions are needed.

Following a February board meeting on the Groundwater Monitoring Program, the committee asked to see computer visualizations of the regional groundwater flow model that is being developed. The committee met offsite at Leidos Engineering in Oak Ridge to view the model.

The flow model will support scientific and technical requirements for remedial investigations and will help researchers understand how the complex groundwater system in and around the ORR works.

At the September committee meeting, ORSSAB Chair Belinda Price said stakeholders have a strong interest in groundwater and want to understand how contaminated groundwater affects them. She said the Oak Ridge model could have implications at other sites in the DOE EM complex. Ms. Price said ORSSAB will continue to monitor and support the effort.

Input on OREM Budget Request

Each year OREM requests ORSSAB's input on its FY +2 budget request to DOE Headquarters. OREM always provides a briefing to ORSSAB on its budget status and requests the board's opinion via a recommendation.

Following the March board presentation by Karen Thompson, DOE, on the FY 2018 budget formulation and prioritization of projects, the committee discussed near-term priorities and future milestones for Oak Ridge cleanup as well as the possibility of drafting a recommendation on the FY 2018 budget for DOE to consider.

Mr. Adler stated that the board's input is helpful to DOE particularly in terms of addressing the sequencing and appropriateness of spending priorities already established as future milestones. He advised the board to assess the priorities outlined in Ms. Thompson's March presentation, such as completing cleanup of ETTP and addressing

mercury contaminated facilities at Y-12, and to consider the suitability of the sequence and work scope that is planned.

Mercury Cleanup Strategy

At the June ORSSAB meeting Mark Peterson, ORNL, provided a status update on technology development to support the Mercury Cleanup Strategy at Y-12. Following the presentation, board members participated in a site tour of the Aquatic Ecology and Chemistry laboratories at ORNL to learn firsthand about ongoing research to address mercury contamination in Oak Ridge's East Fork Poplar Creek.



EM&S Committee members at the Aquatic Ecology Laboratory: Elizabeth Ross, Ed Trujillo, and Greg Paulus, with Richard Burroughs taking photograph. Holding a river sturgeon is Mark Peterson, ORNL.

Both the presentation and the tour provided valuable insights for the board on contributing factors to the levels of mercury found in the creek, possible avenues for remediation, and potential environmentally friendly approaches to reducing mercury concentrations in soil, water, and fish.

At the committee's June meeting after the tour, the committee members discussed options for a possible recommendation. No action was taken at the time, but the committee will continue to discuss the issue.

Public Involvement Plan

Ben Williams, DOE, briefed the board on the status of revision to the 2016 Public Involvement Plan (PIP). DOE updates the PIP every three years in collaboration with EPA and TDEC.

The document informs the public on how to be involved in federal projects, how the CERCLA process works, information on stakeholders, and points of contact for specific information.

Mr. Williams discussed the revisions made to the 2013 edition that will be included in the 2016 document. Core revisions were made to address the following:

- Online communication—The 2016 PIP emphasizes avenues of communication more relevant to the digital age. OREM has a new website with a blog and news releases and is also active on social media. The PIP highlights these outlets in an effort to increase access to information and raise public awareness more broadly.
- Audience—The document has been streamlined so as not to appear too technical, complicated, or lengthy for the average reader. Mr. Williams noted that ORSSAB advice on this point would be particularly welcome.
- Stakeholders—The list of stakeholders has been updated and expanded with current information.
- Contact Information—Contact information for stakeholders, offices, and outlets for public involvement has been expanded and updated.

Mr. Williams provided a draft of the 2016 version and requested feedback from ORSSAB for inclusion in a final draft that will be sent to EPA and TDEC.

Other Activities

In addition to attending board and committee meetings, ORSSAB members participated in a number of other activities in FY 2016.

On the following pages are some examples of ORSSAB members participating outside of board and committee meetings.

ORSSAB Celebrates 20 Years of Service in FY 2016

The primary mission of ORSSAB is to provide recommendations to OREM regarding cleanup and stewardship on the ORR. Since its establishment in 1995 ORSSAB has provided more than 200 recommendations to DOE.

But during that 20-year period ORSSAB had other significant milestones and accomplishments.

In 1999 the board hosted a national workshop on stewardship and began the development of the Stewardship Information Resource Kit for use in area high schools. In 1999 ORSSAB was the first of the site specific advisory boards to appoint a student representative.

In 2005 the board unveiled a permanent exhibit at the American Museum of Science and Energy.

The Environmental Protection Agency recognized the board in 2006 with its “Citizen Excellence in Community Involvement Award.”



The first Oak Ridge Site Specific Advisory Board in 1996.

The board sponsored a workshop in 2007 that led to the establishment of the Center for Oak Ridge Oral History.

Historic preservation has also been of interest to the board, and in 2008 ORSSAB co-sponsored a public meeting on ways to preserve the historic

significance of the K-25 Building at ETPP.

ORSSAB Members Participate at Waste Management Symposium

ORSSAB leadership traveled to Phoenix, Ariz., in March to present a paper at the annual Waste Management Symposium.

Board Chair Belinda Price and Secretary Dave Hemelright co-authored a paper entitled



ORSSAB Chair Belinda Price presented a paper at the 2016 Waste Management Symposium in Phoenix, Ariz.

“The Effectiveness of Advisory Boards: the U.S. DOE EM Site Specific Experience.” They reviewed the evolution of ORSSAB, emphasizing changes over the years and the board’s growth as an advisory board that fosters a positive and productive experience for members while fulfilling its mission to provide informed recommendations to DOE.

Mr. Hemelright also represented ORSSAB as the immediate past chair in a panel discussion entitled “Partnering for Success” that highlighted EM’s cleanup efforts in Oak Ridge.

Board Hosts EM SSAB Chairs’ Meeting in April

Officials from DOE Headquarters and representatives from each of the eight site specific advisory boards convened in Oak Ridge in April for two and half days of touring and meetings.

Twice a year the chairs and other members of the boards

meet with DOE to discuss common issues and hear presentations by EM personnel that address common interests among the boards.

The first day was set aside for a tour of the ORR, and the evening was a time for fellowship among participants at the Event Center on Melton Hill Lake.

EM SSAB and DOE representatives got down to business on April 20 at the DoubleTree Hotel.

DOE Principal Deputy Assistant Secretary for EM Mark Whitney provided an update on the EM program nationwide.

The chairs of the individual SSABs discussed issues specific to their sites, followed by updates from DOE personnel on waste disposition and the status of recovery at WIPP.

On the afternoon of the 20th the chairs worked on finalizing a couple of recommendations to DOE. The recommendations suggested there should be community investment clauses included in contracts related to EM cleanup work and that DOE should continue to fully fund the operations of the EM SSAB.

The meeting wrapped on the morning of the 21st with a panel discussion on reindustrialization and land use.



ORSSAB members at the Spring Chairs’ meeting reception: left to right, Mary Smalling, Bob Hatcher, and Dave Hemelright

ORSSAB Leadership Travels to Las Vegas for EM SSAB Chairs' Fall Meeting

Board leadership from Oak Ridge traveled out west to meet with DOE EM officials at the Fall EM SSAB Chairs' meeting.

Leadership of all eight site specific advisory boards convened August 30–September 2 for the meeting in Las Vegas, Nev.



ORSSAB Chair Belinda Price and Secretary Dave Hemelright at the Fall 2016 EM SSAB Chairs' meeting.

The event included a full-day tour of the Nevada National Security Site, followed by a two-day meeting of presentations from EM leadership, a round robin panel highlighting the work of individual boards, and opportunities for open discussion and public comments.

The board chairs submitted a white paper for the new administration in Washington, D.C., that addresses near-term priorities and future challenges at EM's major cleanup sites.

ORSSAB and OREM Leaders Attend National Cleanup Workshop

Leadership from ORSSAB and OREM participated in the 2016 National Cleanup Workshop in Alexandria, Va., in September.

The annual event hosted by the Energy Communities Alliance brought together more than 500 attendees from DOE, contractors, state and local government, tribal leaders, and other stakeholders.

ORSSAB Chair Belinda Price attended several of the work sessions. OREM Manager Susan Cange and UCOR President Ken Reuter did a presentation on Oak Ridge EM successes.

ORSSAB Helps OREM Celebrate Completion of "Vision 2016"

OREM completed a major milestone by fulfilling its vision for 2016 and moving the program closer to reindustrialize ETPP.

Vision 2016 capped a decade of work to demolish all of the uranium enrichment facilities at ETPP. EM leadership, site workers, and ORSSAB members attended a ceremony to commemorate the achievement.



ORSSAB members Venita Thomas, Eddie Holden, center, and Christopher Beatty attended OREM's Vision 2016 celebration.

Members & Liaisons

The following are members and student representatives who served during all or part of FY 2016.

Leon Baker is a senior radiation protection technician for Spectra Tech/ARS Contracting Services. Prior to that he was a logistics coordinator with DOW Chemical. He worked at Oak Ridge Associated Universities in Oak Ridge and also worked at the Savannah River Site for almost 20 years. He received Associate of Applied Science degrees in Science and Mechanical Engineering Technology from Pellissippi State Community College in Knoxville, Tenn.

He received his Bachelor of Science (B.S.) in Health Care Management from Southern Illinois University in Carbondale, Illinois, a Masters of Business Administration from Brenau University in Gainesville, Ga., a Masters of Education from South College in Knoxville, Tenn., and is presently completing his B.S. in Industrial Engineering at East Tennessee State University in Johnson City, Tenn.

Leon, who lives in Oak Ridge, is a member of the National Society of Black Engineering, Sigma Alpha Lambda, Phi Kappa Phi, NAACP Oak Ridge Chapter, the National Health Physics Society and its local chapter, Habitat for Humanity Selection Board, Oak Ridge Education Board, Knoxville Area Rescue Ministries Volunteer, Youth Mentor & Tutor.

Kathryn Bales is a senior nuclear engineering student at the University of Tennessee, Knoxville (UT), pursuing a career as a medical physicist. She is set to graduate from UT in May and is currently preparing for a doctoral program in medical physics. Kathryn lives in Knoxville.

Christopher Beatty lives in Knoxville and works as a quality assurance engineer with Innovative Design Inc., which provides support for the U.S. ITER project at ORNL. He previously held positions with Jacobs

Technology, NASA, the U.S. Space Army Missile Defense Command in Huntsville, Ala., and the UT Space Institute in Tullahoma, Tenn.

Richard Burroughs has served as the chief of staff in the Anderson County mayor's office since 2012. Prior to that post, his professional experiences were related to his background as a registered professional geologist with extensive hydrogeological expertise in aquifer characterizations and remediation in soil and groundwater environments.

His employment history includes 25 years working primarily with Resource Conservation Recovery Act and CERCLA projects in a variety of states. Richard received his B.S. and M.S. in geology from Southern Illinois University and the University of Arkansas, respectively. He is a resident of Oak Ridge.

Alfreda Cook is a retired data and systems analyst. As an employee of successive contractors to the OREM Program, she compiled and maintained project lifecycle waste volume and destination data as measures of performance for cleanup projects on the ORR since the early 1990s. During that time, she managed the development of various electronic systems that enhanced the accuracy and reliability of waste information reported to DOE. Alfreda received her B.S. in Organizational Management from Tusculum College. She is a volunteer for CASA of the Tennessee Heartland, an advocacy group for abused and neglected children. Alfreda resides in Oak Ridge.

Sophia Cui was one of the ORSSAB student representatives for FY 2015-16. She graduated from Hardin Valley Academy, where she was on the Hardin Valley varsity tennis team for three years. Sophia is interested in medicine and health sciences and is thinking about a career in medicine.

She was the President of the American Red Cross Club at Hardin Valley and volunteered with the local Red Cross to help and support the community. She was also the vice president of Health Occupations Students of America, which competes in health-related knowledge competitions.

Martha Deaderick is a retired educator from Kingston who worked for the city school system in Oak Ridge from 1975 until 2004, where she specialized in English, social studies, Tennessee history, and special education. She received her B.S. in education and a Special Education Certification from the University of Tennessee. She is a member of the Roane County Environmental Review Board, the Tennessee Citizens for Wilderness Planning, and Oak Ridge Schools Retired Teachers.

Mike Ford lives in Knoxville and is a technical sales representative for the Garland Company, which is a manufacturer of high-performance roofing and building envelope materials. Prior to Garland he served for several years as a youth pastor in Paducah, Ky., and then as an advertising representative in Nashville. He is the past president of the Building Owners and Manager's Association, a member of the International Facility and Management, and the Tennessee School Plant Management Association. Mike received his Bachelor of Arts (B.A.) in psychology/religious studies from Harding University in Arkansas.

Rosario Gonzalez manages the cafeteria at St. Mary's Catholic Church in Oak Ridge, where she has been employed since 1986. She previously worked as a secretary, earning her Secretarial Academy Certification in Torreón, Mexico. Rosario lives in Oak Ridge.

Lisa Hagy is a financial services representative with First Tennessee Bank. She participates in a variety of United Way activities, has been a member of the Chamber of Commerce and served on the board of a domestic abuse shelter. She attended the University of South Carolina. Lisa is a resident of Alcoa.

Bob Hatcher is a research scientist in the Department of Earth and Planetary Sciences at the University of Tennessee-Knoxville and holds the position of Distinguished Scientist and Professor. He worked 14 years under a joint appointment between the university and ORNL as part of the UT/ORNL Distinguished Scientist Program. He received his B.A. in geology and chemistry and his M.S. in geology at Vanderbilt University. He earned his doctorate in structural geology from the University of Tennessee-Knoxville. He was the senior author of the early 1990s ORNL effort to produce a new geologic map and report on the geology of the ORR. Bob lives in Oak Ridge.

Dave Hemelright is the K-12 Facilities Specialist for Kaatz, Binkley, Jones & Morris Architects, Inc., specializing in Tennessee public school planning, design and construction and maintenance. He currently serves on the board of the Tennessee School Plant Management Association, American Truck Historical Society, and has served on the Loudon County Planning Commission. He received his B.A. in American history from Hobart College. Dave lives in Lenoir City.

Eddie Holden is a retired transportation logistics manager who most recently worked with OREM, from October 2004 until December 2014. Before that he worked for 31 years as a transportation logistics manager with Yellow Freight in various locations across the United States. He received a B.S. in Transportation Logistics from UT in Knoxville, Tenn. A native Oak Ridger, he is now a resident of Knoxville.

Howard Holmes is a physician with Mercy Primary Care of Lenoir City. Howard earned his B.S. in microbiology and M.S. in natural sciences from the University of Arkansas. He attended medical school at St. George's University and trained in internal medicine at East Tennessee State University. He resides in Lenoir City.

Alana Joldersma was one of the ORSSAB student representatives for FY 2015-16. She graduated from Oak Ridge High School. As a junior she was selected to be a co-project manager for the school's FIRST (For Inspiration and Recognition of Science and Technology) Robotics Team, the 4265 Secret City Wildbots.

Now at the University of California-Davis, Alana is majoring in communications and environmental policy and planning. She hopes to contribute in creating and enforcing laws in mass food production to help make it a more sustainable practice.

Jennifer Kasten was a nuclear environmental engineer who worked on environmental management and nuclear fuel cycle activities at ORNL and performance analyses associated with the nuclear industry/nuclear power plants. Jennifer received a B.S. in biology from Valparaiso University, a B.S. in civil/environmental engineering, and an M.S. in nuclear/radiological engineering from the University of Tennessee. Jennifer lives in Knoxville.

Lara Manning is one of the student representatives for FY 2016-17. She is a senior at Oak Ridge High School. Her love of the outdoors as well as her studies in advanced placement environmental science led to her interest in serving as a student representative on ORSSAB and learning more about cleanup efforts in Oak Ridge.

Gabrielle McAllister is another student representative on ORSSAB for FY 2016-17. She is a senior at Knoxville's Hardin Valley Academy. Also a student in advanced placement environmental science, she participates in two internships with Tremont and the University of Tennessee related to environmental research in East Tennessee.

Donald Mei is a retired engineer who was employed from 1986 to 2007 by Duke Energy in Charlotte, N.C. During that time,

he was the supervising engineer and technical manager in the Radiation Dosimetry and Records Department and the senior engineer/nuclear production engineer in the Radiation Protection Section. He is a Certified Health Physicist by the American Academy of Health Physics. Donald received his B.S. in physics from Cheng-Kung University in Taiwan, his M.S. in health physics from the University of Tennessee, and his doctorate in nuclear engineering from Kansas State University. Donald lives in Oak Ridge.

Greg Paulus retired as the president/owner of Metalite Industries, Inc., which produces and modifies products for persons with mobility disabilities. He retired as a lieutenant colonel from the U.S. Air Force. Greg received his B.S. in mechanical engineering from Marquette University and his Master of Business Administration from Central Michigan University. Greg is a resident of Rockwood.

Belinda Price is a senior hydrogeologist with Alliant Corporation. She has more than 30 years experience in environmental investigation and environmental remediation as a geologist, hydrogeologist, and project manager. She is a Professional Geologist in the states of Alabama, California, Florida, Georgia, Kentucky, and Tennessee, and is a member of the Geological Society of America. She is a past Associate Editor of Groundwater, the flagship journal of the National Groundwater Association. Belinda received her B.Sc. in geology from the University of Bristol, U.K., and her M.Sc. in hydrogeology from University College London U.K. She lives in Knoxville.

Elizabeth Ross is the Vice President and Knoxville Branch Manager at Engineering Consulting Services Central (ECS), which provides geotechnical engineering, environmental consulting, construction materials testing, and facilities engineering services. Elizabeth lives in Knoxville.

A former OSHA Health Compliance Officer with more than 15 years of technical experience, she currently serves as the lead Environmental Principal for Indoor Quality Services for ECS Carolinas and ECS Central.

Mary Smalling is a student at Pellissippi State Community College in Knoxville concentrating on business and law. Until 2006 she was the owner of a metal finishing and detailing business in Marshfield, Mo. She was a 911 operator for the Webster County, Missouri Sheriff's Department and served on the board of directors of Southwest Missouri Legal Aid representing Webster County. Mary lives in Louisville, Tenn.

Deni Sobek lives in Oak Ridge and is a teacher with the Oak Ridge school system where she has been employed since 2003. She received her B.S. in botany from Iowa State University and a teaching certification in science from Texas Tech University. She is a member of the National Science Teachers Association and the Tennessee Teachers Association.

Corkie Staley, of Oak Ridge, retired as a teacher from the Oak Ridge City Schools in 2011. She is a past president of the Oak Ridge Education Association and a past member of the Tennessee Education Association Board of Directors. Corkie serves on the board for the Center of Oak Ridge Oral History. She currently works part-time at Chapel on the Hill Nursery School in Oak Ridge. She received her B.A. in education from West Virginia State College and her M.S. degree in curriculum and instruction from the University of Tennessee.

Scott Stout is the director of the Office of Emergency Services for Roane County, Tennessee. He received his B.A. in liberal arts from Tennessee Wesleyan College and his Hazmat Specialist Certification from the Tennessee Emergency Management Agency. Scott lives in Rockwood.

Fred Swindler retired as the vice president of IsoRay Medical, Inc. He continues to act as a consultant in regulatory affairs for the Washington-based company, which provides innovative approaches to cancer treatment and diagnosis through proprietary medical isotope technologies. Fred lives in Rockwood.

Venita Thomas is an occupational safety and health specialist with Alliant Corp., which provides services to ORNL. She previously worked at DOE's Savannah River Site as an environmental compliance consultant. She has a B.S. in chemistry from Columbia College in Columbia, S.C., and an M.S. in Occupational Safety and Health/ Environmental Management from Columbia Southern University in Orange Beach, Ala. Venita lives in Knoxville.

Ed Trujillo, Oak Ridge resident, serves as chair of the board's Environmental Management & Stewardship Committee. He retired as a project manager from Bechtel Corp., after having worked for 35 years on a wide variety of projects for DOE, the U.S. Air Force, several industrial and manufacturing facilities including oil refineries, fertilizer plants, and fossil fuel power generating stations. Ed's project experience includes managing the engineering and construction of a maintenance facility for heavy duty mining equipment in Chile and several environmental projects for Bechtel at ETTP, Y12, ORNL, and PANTEX in Texas. He holds a B.S. in engineering from the University of Wisconsin.

Rudy Weigel, an Oak Ridge resident, is a retired industrial hygienist who previously worked for Concurrent Technologies Corp., and prior to that with Bechtel Jacobs and Pacific Western Technologies, both in Oak Ridge. He has extensive experience as a bioenvironmental engineer, environmental scientist, and hazardous waste program coordinator.

Dennis Wilson lives in Rockwood and is a retired technology manager, who most recently was employed by Johnson-Diversey Products as the director of technology and intellectual property. While much of his 39-year career was focused on technology and intellectual property management, his early career included work as a resin and polymer chemist, for which he was awarded seven global patents. He received his B.S. in chemistry from the University of Wisconsin; his M.S. and doctoral degrees in material science from the University of Connecticut; and certifications in a wide range of technology and management courses from the Massachusetts Institute of Technology, Harvard, and the University of Wisconsin.

Phil Yager is an Oak Ridge resident and the Anderson County commissioner for District 8 in Oak Ridge. He is a retired investment services manager who worked as a vice president for Goelzer Investment Management in Indianapolis, Ind. He is an active volunteer and community leader in

Oak Ridge. He serves on the Oak Ridge Industrial Development Board, as well the Oak Ridge Building and Housing Code Appeals. Phil is also treasurer of the Emory Valley Center and volunteers his time with many civic organizations.

Wanfang Zhou, a Knoxville resident, is a hydrogeologist with ERT, Inc., a company that provides information technology, cybersecurity, program support, and engineering and environmental services to federal and state government agencies. He received his doctorate in water resources and environmental engineering from the University of London's Imperial College of Science, Technology, and Medicine. He is a certified professional geologist by the American Institute of Professional Geologists and a registered professional geologist in five southern states. Wanfang is a member and former vice president of the Tennessee Chapter of the American Institute of Professional Geologists.

AGENCY LIAISONS



Susan Cange
ORSSAB Deputy
Designated
Federal Officer



Dave Adler
Alternate Deputy
Designated
Federal Officer



Melyssa Noe
Alternate Deputy
Designated
Federal Officer



Connie Jones
EPA Liaison



Kristof Czartoryski
TDEC Liaison

REPRESENTING NINE COUNTIES IN EAST TENNESSEE



Current number of board members from each county:

- Anderson - 7
- Blount - 2
- Knox - 4
- Loudon - 2
- Roane - 4

Join the Board

A broad spectrum of backgrounds and viewpoints is desired for board membership; technical expertise is not required. Applications for membership are accepted at any time and are actively solicited through a variety of media during specific recruitment periods. Residents from the counties affected by DOE operations are encouraged to apply. These counties include Anderson, Blount, Campbell, Knox, Loudon, Meigs, Morgan, Roane, and Union. Applications may be obtained by calling the ORSSAB support offices at (865) 241-4583 or 241-4584 or visiting our web page at www.energy.gov/orssab.

ABBREVIATIONS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	U.S. Department of Energy
EM	Environmental Management
EPA	Environmental Protection Agency
EMDF	Environmental Management Disposal Facility
ETTP	East Tennessee Technology Park
FY	fiscal year
ORNL	Oak Ridge National Laboratory
ORR	Oak Ridge Reservation
ORSSAB	Oak Ridge Site Specific Advisory Board
TDEC	Tennessee Department of Environment and Conservation
TRU	transuranic
UCOR	URS CH2M Hill
WIPP	Waste Isolation Pilot Plant
Y-12	Y-12 National Security Complex