OREM

Oak Ridge Office of Environmental Management

October 2013

Program Plan

FY 2014 to 2024

U.S. DEPARTMENT OF ENERGY

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A message from Mark Whitney

Oak Ridge Office of Environmental Management Colleagues:

The Oak Ridge Office of Environmental Management has realized a great number of successes during the past two decades. Major closure projects of burial grounds dating back to the 1940s have resulted in a significant reduction of contaminant releases. Multiple systems have been put into place for capture and treatment of contaminated groundwater. Water quality and ecological health in adjoining streams are improving. Significant progress has been made toward decommissioning unneeded buildings and facilities, and we continue to permanently dispose of hazardous materials associated with past uranium enrichment and isotope production mission activities.

While we should be enormously proud of our past accomplishments, there is much left to do to realize our vision of a fully remediated Oak Ridge Reservation. In response, we have developed this plan that identifies the remaining environmental cleanup challenges at the East Tennessee Technology Park, the Y-12 National Security Complex, and the Oak Ridge National Laboratory, and outlines our priorities and strategy for the first ten years of our effort.

In addition to detailing our cleanup approach locally, the OREM Program Plan supports the Department of Energy's Strategic Plan and the overall goals of the Environmental Management Program nationally.

Our program is complex and full of uncertainties. During the past several years we have seen declining budgets, yet the expectation to be successful has not changed. We have adapted and found innovative ways to safely and efficiently accomplish our work, and that is a testament to your professionalism and ability. Having a comprehensive plan to guide our efforts and push us to execute our mission in the most efficient and effective way possible is critical, particularly in times like these.

I want to thank each and every one of you for the effort spent developing this plan. This is our plan and, while the cleanup challenge is complex and difficult, this sets us on the course towards realizing our vision for the Oak Ridge Reservation and I'm confident that we'll be successful in our endeavors!

Mark Whitney
Manager, Oak Ridge Office of Environmental Management

Vision
Mission
Core Values

Vision

The Oak Ridge Reservation occupies approximately 34,000 acres, and is located in East Tennessee, within the City of Oak Ridge limits. Three sites lie within its borders: East Tennessee Technology Park, Y-12 National Security Complex, and Oak Ridge National Laboratory.

In 2011, the United States Department of Energy (DOE) adopted four agency-level goals designed to guide its mission to advance America's energy, economic, and national security. The Oak Ridge Office of Environmental Management's (OREM) Program contributes to meeting Goals 3 and 4. Our plan for cleanup of the Oak Ridge Reservation (ORR) envisions completion of cleanup activities at East Tennessee Technology Park (ETTP), Y-12 National Security Complex (Y-12), and Oak Ridge National Laboratory (ORNL) through the reduction of environmental, safety and health risks in a cost-effective manner, and within a framework supported by our stakeholders. Ultimately, these efforts will reduce the surveillance and maintenance costs associated with managing the ORR, and contribute to the advancement of the four goals that guide DOE's mission.

DOE Strategic Plan of 2011

Goal 1: Catalyze the timely, material, and efficient transformation of the nation's energy system and secure U.S. leadership in clean energy technologies

Goal 2: Maintain a vibrant U.S. effort in science and engineering as a cornerstone of our economic prosperity with clear leadership in strategic areas

Goal 3: Enhance nuclear security through defense, nonproliferation, and environmental efforts

Goal 4: Establish an operational and adaptable framework that combines the best wisdom of all Department stakeholders to maximize mission success

“The Oak Ridge Reservation will be remediated, modernized, and reindustrialized as an enduring national asset.”

Mission

Complete the cleanup of the Oak Ridge Reservation to:

- Protect the region's health and environment
- Ensure the Department of Energy's vital missions of Science, Energy, and National Security
- Make clean land available for future use

Core Values

- Place the highest priority on safety and security
- Value the diversity, experience, and skills of our people
- Operate in an open manner promoting collaboration and teamwork with our stakeholders
- Encourage innovation and continuous improvement in everything we do
- Demonstrate accountability by being good stewards of the taxpayers' money


Heritage
center
HERITAGE CENTER BLVD
MAIN ENTRANCE

Perspective

Perspective

The Corps of Engineers began acquiring land in East Tennessee for the Manhattan Project in October 1942. By March 1943, some 56,000 acres were sealed behind the fences and checkpoints of the Clinton Engineer Works and several major industrial facilities were under construction. The K-25 and Y-12 plants were built to separate the fissile isotope uranium-235 from uranium-238, and the X-10 site was established as a pilot plant for the Graphite Reactor which was used to produce plutonium. The ORR had been born.

Throughout the next six decades these three sites, K-25, now called ETTP; Y-12; and X-10, now ORNL, would purify isotopes, conduct research, and build weapons, which created environmental legacies that would require decades more to cleanup.

As a result of legacy contamination, the ORR was placed on the National Priorities List in 1989. This list is comprised of property and facilities suspected to pose a threat to human health and/or the environment, and cleanup is conducted under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

DOE established the Office of Environmental Management to oversee the cleanup of hazardous materials at DOE facilities throughout the United States, including the ORR, in 1989. The Federal Facility

Agreement, negotiated by DOE, the United States Environmental Protection Agency, and the Tennessee Department of Environment and Conservation in 1992, establishes guidelines and milestones for cleanup of the ORR in accordance with CERCLA regulations and other laws and regulations.

Early on in the OREM program, a dedicated group comprised of citizens from the Oak Ridge community, regulatory agencies, DOE and DOE contractor personnel engaged in a comprehensive effort to propose land use end states for all ORR acreage impacted by contamination. CERCLA Records of Decision for each of the major watersheds on the ORR have been signed, based largely upon end use recommendations provided by this group.

The Environmental Protection Agency placed the Oak Ridge Reservation on the National Priorities List in 1989. Three years later, DOE, EPA, and TDEC signed the Federal Facility Agreement to guide and assess the cleanup progress.

OREM Accomplishments

Significant progress has been made toward the cleanup of the ORR. Off-site environmental legacy waste sites affected by past DOE operations have been completely remediated. Regulatory processes and decisions, along with critical infrastructure such as waste treatment facilities and on-site disposal cells have been put in place to support demolition, disposition, and remediation at the sites.

Several Reservation-wide initiatives have been accomplished such as the Legacy Material Disposition Program that dispositioned over 100 million pounds of mixed waste. The footprint of the National Priority List property that requires cleanup has significantly decreased from the original 33,508 acres to 14,115 acres. Some of the major accomplishments made to date at each of the three sites are summarized here.

ETTP

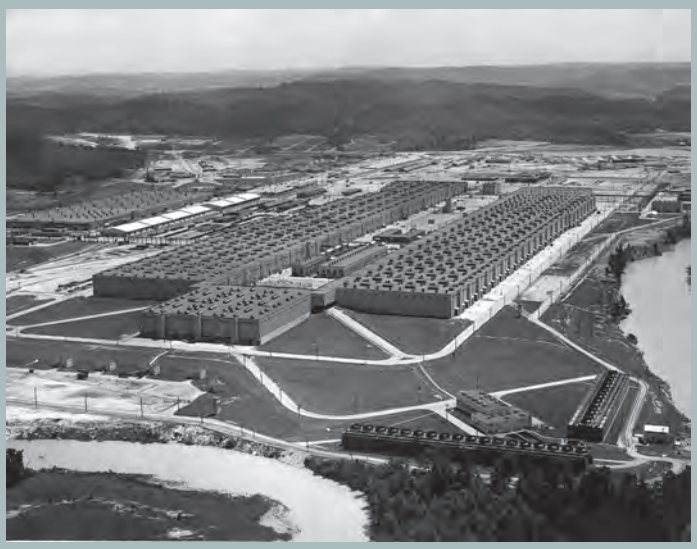
- Constructed, operated, and closed the Toxic Substances Control Act Incinerator, which successfully treated 35 million pounds of waste.
- Demolished hundreds of buildings, including most of the gaseous diffusion buildings: K-33; K-29; and K-25 complete in summer 2014.
- Dispositioned 7,000 depleted uranium hexafluoride cylinders to an off-site facility.

ORNL

- Completed Melton Valley cleanup, including construction of 145 acres of protective soil caps, demolition of 34 facilities, and disposition of 37,000 cubic yards of waste.
- Constructed the Transuranic Waste Processing Center, enabling processing and disposal of legacy waste inventory. To date, 62% of the contact handled-TRU waste and 14% of remote handled-TRU waste has been dispositioned.
- Removed Tank W-1A, a principal source of groundwater contamination in the Central Campus, and grouted, in-place, six massive gunite tanks and their contents.

Y-12

- Constructed and currently operate the 2.2 M cubic yard Environmental Management Waste Management Facility for disposal of CERCLA waste.
- Constructed two treatment systems that annually remove mercury from 110 million gallons of water.
- Removed and dispositioned thousands of pounds of mercury-contaminated sludge from Y-12's West End Mercury Area storm sewer system during two different events that collectively cleaned over 14,000 feet of piping.



ETTP 1947

Y-12 1946

ORNL 1947

- Transitioned 332,000 square feet of building space and ~1,400 acres of land to the private sector under the reindustrialization mission.

- Removed 42 facilities from ORNL's Central Campus.
- Completed first phase of U-233 Direct Disposition project.

- Removed all waste and material from the 7-acre Old Salvage Yard, and remediated the area's soil.
- Demolished four dilapidated Biology Complex facilities and cleaned out Alpha 5 and a portion of Beta 4 in preperation for future demolition.

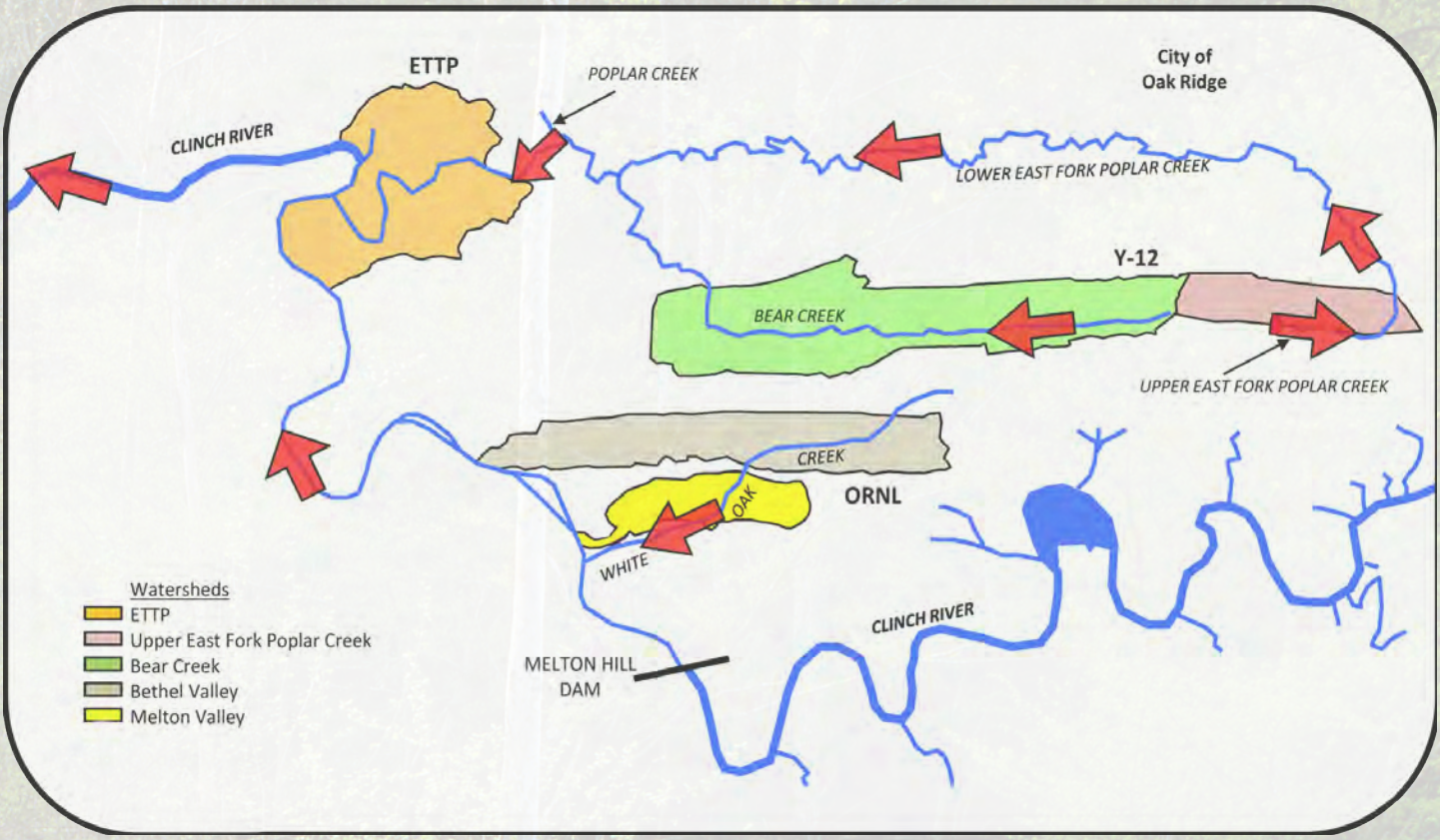
Balancing Priorities

Based on the watershed approach, all three sites have developed a portfolio of projects designed to complete remediation for their respective site. All three portfolios are integrated into a single plan for the Reservation, by balancing risks with all regulator, stakeholder, and mission priorities across the OREM Program.

Many of the risks at ETTP have already been mitigated, and the focus is now on demolishing legacy facilities and reducing lifecycle costs. The site risk has shifted to a risk of NOT completing the work—Life-cycle Cost Risk. Delays in completing the work increase the demolition cost due to continued building deterioration, as well as add infrastructure, surveillance and maintenance, security, and landlord costs for each year the cleanup is delayed.

At Y-12, mercury from on-site sources continue to migrate into Upper East Fork Poplar Creek, which enters public water at the site boundary. This is a high Environmental Risk, and is the driver for completing the near-term work to reduce mercury in surface waters at Y-12 through construction of a treatment facility to be located on-site (the Outfall 200 Mercury Treatment Facility).

ORNL continues to deal with the removal of legacy nuclear materials and waste on-site. Some progress has been made dispositioning U-233 canisters and on-site stored transuranic waste; however, these projects are not yet complete and remain the highest Nuclear/Radiological Risk at ORNL.



Early in the cleanup process, OREM defined a strategy for cleanup of the three sites based on a watershed approach. Such an approach reflects an understanding of each site's specific geologic setting and potential contaminant migration pathways. It provides a logical grouping of work and a meaningful and measureable method for managing areas of contamination, tracking contaminants of concern, analyzing environmental effects, making decisions, and defining projects within each site. Based on available resources (e.g., funding, workers, disposal capacities, etc.) and further analysis, the cleanup scope for all three sites is then integrated and prioritized.

Regulatory commitments at ETTP, National Historic Preservation agreements, and continuation of contracted demolition scope make K-25 and K-27 building demolition a high priority for OREM. Defense Nuclear Facilities Safety Board findings and continuation of contracted scope result in the uranium-233 and transuranic waste disposition projects at ORNL also being a high priority. The urgency to address off-site risk of Y-12 mercury migration in public waters, tempered through the use of institutional controls, completes the top priorities in the OREM Program over the next decade.

Challenges

- Three unique sites with different operational histories and diverse on-going missions
- Over one-half million people live within a 30-mile radius
- High levels of rainfall coupled with shallow groundwater carry contaminants to local waterways
- Excess large-scale, deteriorating and contaminated industrial/nuclear facilities requiring periodic, significant maintenance activities
- Vigilant surveillance of contents and conditions
- Diverse group of partners and stakeholders with differing priorities and expectations

Constraints

- Limited funding with increasing obligations and requirements
- Regulatory requirements and milestones must be met
- Ongoing, nationally vital missions must not be disrupted
- Capacities to treat large volumes of mercury-contaminated soils are not currently available

Risks

- Environmental risk—continuing release of mercury in surface waters above guidlines
- Nuclear/radiological risk—legacy waste and materials containing significant levels of radionuclides remain to be dispositioned
- Lifecycle cost risk—increasing demolition and maintenance costs as buildings deteriorate from schedules extended due to reduced funding
- Deteriorating facilities—create potential for exposure of contaminants to the environment and threaten worker safety
- Unknown contaminant volumes—indeterminate amount of contaminated soils to be addressed
- Cleanup decisions—future groundwater and surface water final decisions have yet to be determined

Key Assumptions

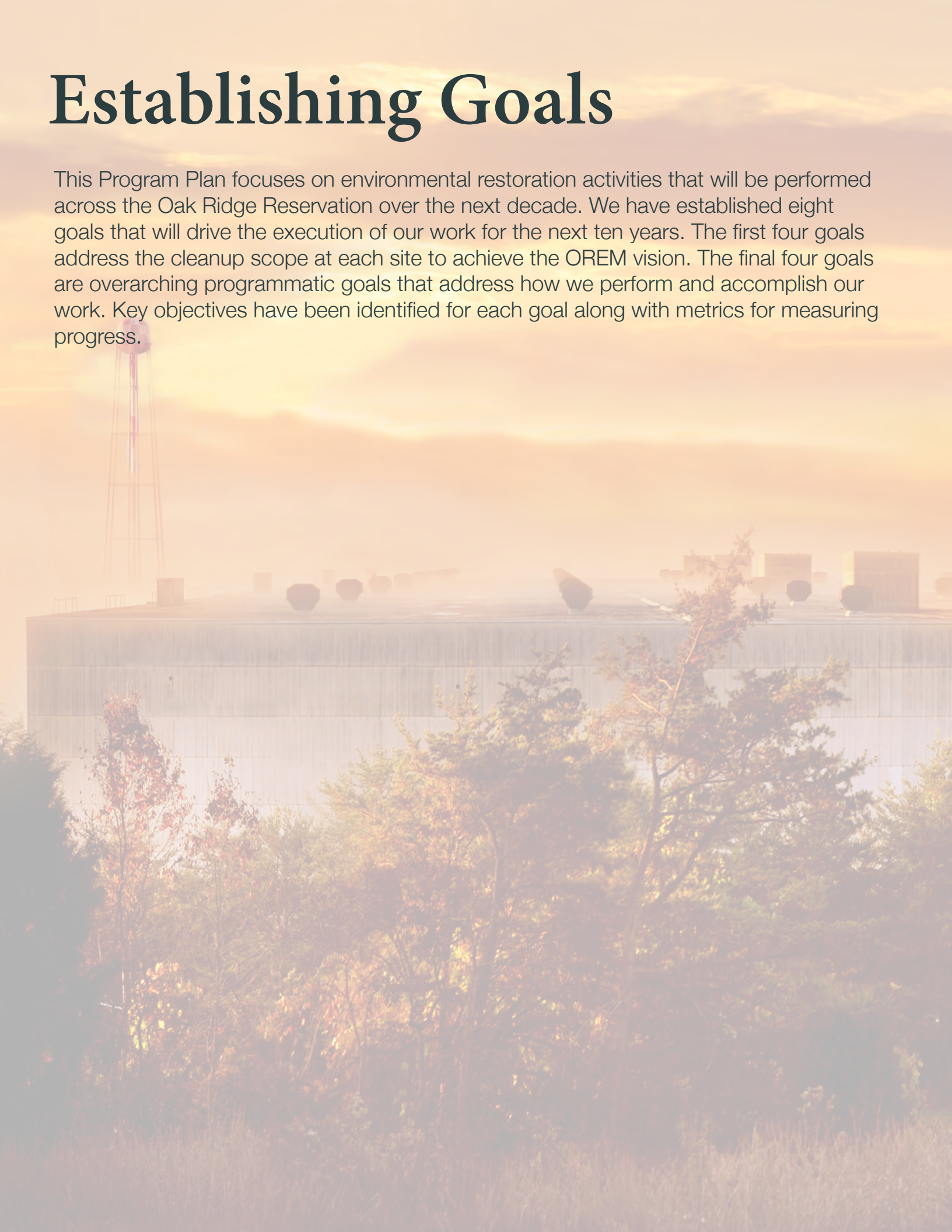
Remediation strategies are needed for each site, to accommodate their unique contaminants and conditions. Plans are developed based on CERCLA investigations and studies to determine the best cleanup approaches that will accomplish acceptable endstates. Projects are defined to accomplish the remedial action decisions. Prioritization and sequencing of work is first done at the site level, and then integrated at the Reservation level. Assumptions are inherent in any process of defining scope, schedule, and cost of work to be performed. Key assumptions for the OREM Program include:

- Cleanup is implemented under CERCLA, in accordance with the Federal Facility Agreement of the ORR.
- Annual funding for the program is assumed to be approximately $420 million through fiscal year (FY) 2018, after which the program funding is assumed to be adjusted for annual escalation.
- Endstates are determined based on meeting land use requirements specified in the CERCLA decision documents.
- Remaining groundwater contamination challenges will be managed by implementing hydraulic isolation measures for current burial grounds, combined with groundwater monitoring and use restrictions. Active groundwater restoration via engineered systems is expected to be limited, with monitored natural attenuation of contaminants being the principal approach.

- Surface water contamination will be controlled by implementing measures to minimize continued contaminant migration into streams, with the goal of meeting State regulatory standards for protection of surface water resources. Removal of contaminated sediments will be limited to isolated stream reaches.
- Prioritization of work is a balanced tradeoff of four elements: risk, regulatory commitments, external stakeholder interests, and mission support needs.
- Work is generally ranked in the following order, highest to lowest:
    - Mitigate off-site releases
    - Reduce migration of contaminants off-site
    - Control ongoing sources of on-site contamination
    - Demolish legacy facilities
    - Address remaining media (soil, groundwater, surface water)

Establishing Goals

This Program Plan focuses on environmental restoration activities that will be performed across the Oak Ridge Reservation over the next decade. We have established eight goals that will drive the execution of our work for the next ten years. The first four goals address the cleanup scope at each site to achieve the OREM vision. The final four goals are overarching programmatic goals that address how we perform and accomplish our work. Key objectives have been identified for each goal along with metrics for measuring progress.



Goal 1: Complete ETTP cleanup (see page 26)
Objective 1: Complete all demolition and remedial action consistent with CERCLA agreements
Objective 2: Implement reindustrialization and historic preservation activities at ETTP

Goal 2: Disposition ORNL uranium-233 inventory (see page 28)
Objective 1: Complete uranium-233 direct disposition campaign
Objective 2: Conduct downblending operations and dispose remaining uranium-233 inventory

Goal 3: Disposition ORNL transuranic waste inventory (see page 29)
Objective 1: Complete disposition of transuranic debris
Objective 2: Complete disposition of transuranic sludges

Goal 4: Address Y-12 mercury contamination (see page 30)
Objective 1: Ensure proper planning for future mercury cleanup
Objective 2: Reduce mercury in surface water exiting the Y-12 facility
Objective 3: Begin to address mercury contaminated buildings

Goal 5: Support efficient and effective cleanup of the Oak Ridge Reservation (see page 32)
Objective 1: Support efficient disposition of cleanup waste
Objective 2: Conduct cost efficient base operations at ETTP, ORNL, and Y-12
Objective 3: Routinely evaluate surveillance and maintenance plans to ensure unacceptable risks are identified and addressed

Goal 6: Focus on continuous improvement in safety, security, environmental compliance, and quality performance (see page 34)
Objective 1: Integrate safety, security, and quality into all work aspects through more focused activities
Objective 2: Foster a Safety Conscious Work Environment
Objective 3: Implement all program activities in an environmentally sound manner
Objective 4: Maintain a qualified workforce to ensure federal oversight of work performed

Goal 7: Achieve excellence in project and contract management (see page 36)
Objective 1: Complete projects on time and within budget
Objective 2: Continue to hold contractors accountable for delivering results and ensure contractors' performance is fairly evaluated and documented
Objective 3: Promote the use of small business contractors

Goal 8: Optimize collaboration with external stakeholders and oversight agencies (see page 38)
Objective 1: Provide public access to program information and opportunity to provide input
Objective 2: Collaborate effectively with external regulatory agencies
Objective 3: Maintain a proactive relationship with the Defense Nuclear Facilities Safety Board

Strategy

Strategy: cleanup

Integrated Cleanup Plan

This plan builds on the successes of the past several decades. Substantial progress has been made remediating contaminated soil and water and demolishing radioactively contaminated facilities. Contamination areas that posed a threat to populations and migration into the environment have been contained through early actions or institutional controls. Radioactive and hazardous wastes and portions of nuclear material inventories that threaten public health and pose a risk to the Department's research and national security missions have been, and are being, dispositioned. This plan outlines OREM's approach over the next decade to continue to safely and cost-effectively reduce the legacy of contaminated facilities, materials, and media including soil, surface water and groundwater on the ORR.

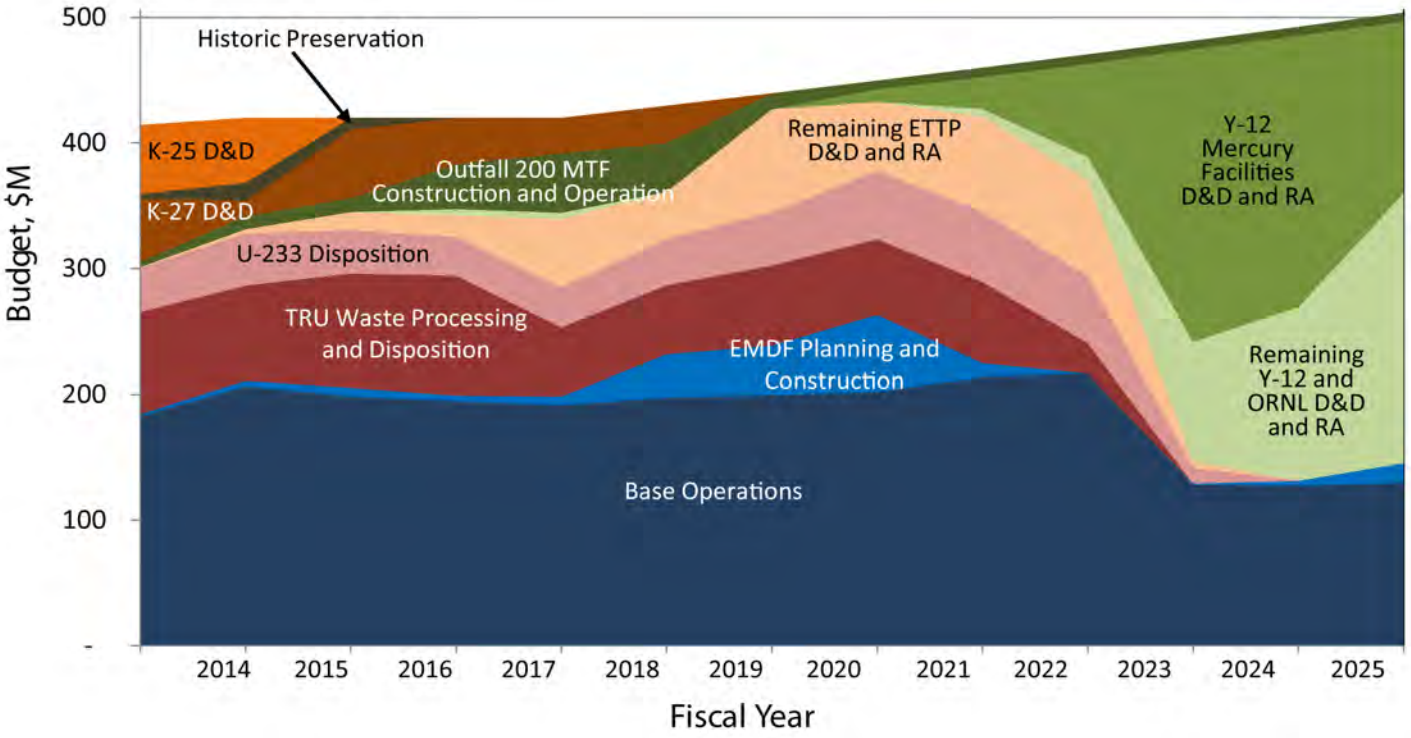
Completion of the four OREM Program cleanup goals over the next decade will accomplish significant mortgage and risk reduction, and allow OREM budgets to be directed to follow-on demolition and remediation at Y-12 and ORNL.

The first four goals of this program capture the cleanup scope for the ORR through fiscal year 2024:

Goal 1: Complete ETTP cleanup
Goal 2: Disposition ORNL uranium-233 inventory
Goal 3: Disposition ORNL transuranic waste inventory
Goal 4: Address Y-12 mercury contamination

Goals 1 through 3 and the first objective of Goal 4 will be completed within the timeframe of this Program Plan. The second and third objectives of Goal 4 will lead into the future demolition and remediation to be accomplished on the Reservation at Y-12 and ORNL.

The schedule and accompanying graphic, below, illustrate the prioritized work scope completion and associated, forecasted costs for the four cleanup goals that will be completed during the next decade.



OREM planned funding profile for cleanup- FY 2014 to 2024

Oak Ridge Environmental Management Cleanup Schedule	Fiscal Years (2014 – 2025)											
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
GOAL 1: Complete ETTP cleanup												
K-25 D&D												
K-27 D&D												
Historical Preservation Activities												
Remainder of ETTP D&D and RA												
GOAL 2: Disposition the Building 3019 uranium-233 inventory												
U-233 Disposition												
Goal 3: Complete disposition of ORNL transuranic waste inventory												
TRU Waste Processing and Disposition												
Goal 4: Address mercury contamination at Y-12												
Outfall 200 Mercury Treatment Facility Planning, Construction, and Operations												
Mercury Process Buildings D&D												
Goal 5: Support efficient and effective cleanup of the Oak Ridge Reservation												
On-site disposal (Environmental Management Disposal Facility) plannning & construction												
Base Operations (treatment and disposal facilities operations, S&M, Infrastructure)												

OREM integrated cleanup schedule

Goal 1: Complete ETTP cleanup

- *Objective 1:* Complete all demolition and remedial action consistent with CERCLA agreements
- *Objective 2:* Implement reindustrialization and historic preservation activities at ETTP

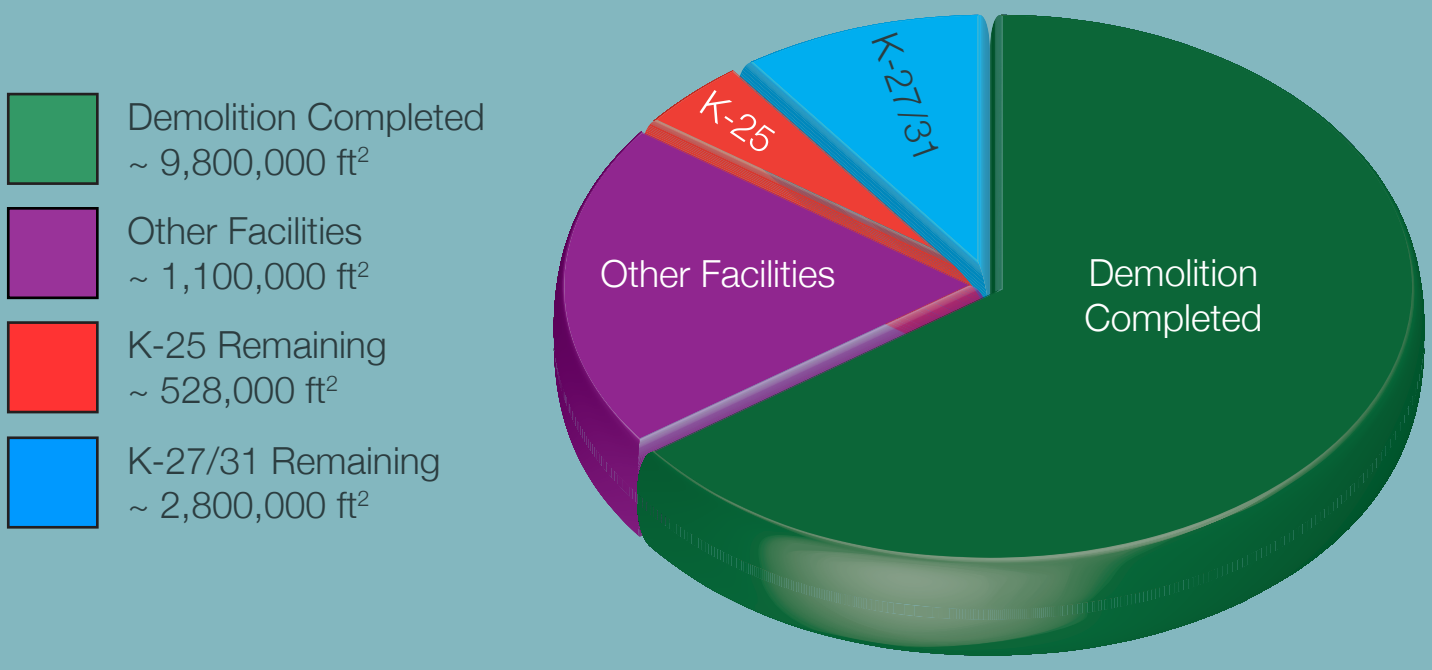
Objective 1: Complete all demolition and remedial action consistent with CERCLA agreements

Performance Measures:

- *Complete K-25 D&D*[1]
- *Complete K-27 D&D*
- *Complete ETTP remaining D&D and remediation*

While most demolition at ETTP is complete, several large, complex projects remain. Former gaseous diffusion buildings K-27 and K-31 remain to be demolished, as do several other complexes (e.g., the Centrifuge Facilities, Toxic Substances Control Act Incinerator Facilities). Soils within the main plant area will be remediated, and final decisions on surface water and groundwater will be made enabling final closure of the facility. Transfers of buildings and land parcels to establish the site as a private sector commercial industrial park is ongoing, and should be completed by the end of this strategic planning period.

ETTP Demolition Scope, Square Footage[2]



1 D&D refers to multiple actions including deactivation, decontamination, decommissioning, and demolition
2 Data as of 9/30/2013

Objective 2: Implement reindustrialization and historic preservation activities at ETTP

Performance Measures:

- *Complete the transfer of all applicable Economic Development parcels to the Community Reuse Organization of East Tennessee*
- *Implement commitments in the Memorandum of Agreement for Historic Preservation*

OREM's historic preservation tasks were developed to recognize and commemorate all of the employees and work performed at the former K-25 site. The actual building footprint for K-25 will be preserved to give an indication of the enormity of the facility. Additionally, a building to house equipment and a viewing tower will be constructed, and a floor of the existing Fire Station will be renovated to store archival documents.

In addition, the EM program is intently focused on ETTP's cleanup for the site to transform into an economic engine for the region. The Department's reindustrialization efforts are transitioning underutilized assets to the private sector to accelerate environmental cleanup and promote economic development. Through the program, DOE is giving new life to buildings, land, and equipment that are no longer necessary to serve mission needs and attract new industry to the area. At ETTP's Heritage Center, DOE has already transferred utility systems, roads, 11 buildings, and approximately 200 acres for private sector use. At the Horizon Center, DOE transferred 500 acres for development. The area is now home of the Carbon Fiber Technology Facility that serves as a national test center for government and commercial partners to scale-up emerging carbon fiber technology.

Goal 2: Disposition ORNL uranium-233 inventory

- *Objective 1:* Complete uranium-233 direct disposition campaign
- *Objective 2:* Conduct downblending operations and dispose remaining uranium-233 inventory

Objective 1: Complete uranium (U)-233 direct disposition campaign

Performance Measures:

- *Complete transfer of material appropriate for programmatic reuse*
- *Ship all CEUSP material to an appropriate disposal facility*

Canisters of U-233 are housed in ORNL's Building 3019. Building 3019 was constructed in 1943 and is the oldest operating nuclear facility in the world. The material is in diverse forms and packages, with various levels of isotopic purity, and the inventory constitutes a Category I quantity of weapons-usable fissile material, requiring high security costs and access restrictions for ORNL as a whole.

Approximately one-half of the canisters will be dispositioned through the Direct Disposition Campaign.

Objective 2: Conduct downblending operations and dispose remaining U-233 inventory

Performance Measures:

- *Prepare Building 2026 for downblending operations*
- *Process, package, and dispose remaining inventory*

The remaining canisters containing uranium-233 will require downblending of the material to concentrations that are below criticality levels. Preparations have begun in Building 2026 to accomplish this work in existing hot cells.

The downblended material wil be solidified. Upon conversion to a solid form, the packaged waste will be disposed of off-site.

Goal 3: Disposition ORNL transuranic waste inventory

- *Objective 1:* Complete disposition of transuranic debris
- *Objective 2:* Complete disposition of transuranic sludges

Objective 1: Complete disposition of transuranic (TRU) debris

Performance Measures:

- *Complete processing and disposition of contact-handled debris*
- *Complete processing and disposition of remote-handled debris*

The Transuranic Waste Processing Center is a facility designed to accommodate processing and repackaging of transuranic materials and waste for disposal at off-site facilities. Currently, the contractor at the facility is retrieving and processing/packaging both contact-handled and remote-handled legacy solid transuranic debris for disposal at the Waste Isolation Pilot Plant. The Site Treatment Plan, approved by TDEC, outlines the planned treatment and delineates milestones to accomplish the processing and disposal of these wastes.

Objective 2: Complete disposition of transuranic sludges

Performance Measures:

- *Complete construction of the sludge processing facility*
- *Complete processing of sludges and disposition of solidified forms*

Transuranic sludges are stored in underground tanks at ORNL. A facility and equipment will be constructed to extract the sludges and process them to a solid form suitable for disposal as low-level waste.

Goal 4: Address Y-12 mercury contamination

- *Objective 1:* Ensure proper planning for future mercury cleanup
- *Objective 2:* Reduce mercury in surface water exiting the Y-12 facility
- *Objective 3:* Begin to address mercury contaminated buildings

Objective 1: Ensure proper planning for future mercury cleanup

Performance Measures:

- *Finalize strategic plan for mercury remediation at Y-12*
- *Complete evaluation of mercury treatment, stabilization, disposition options*
- *Complete comprehensive mercury technology development plan*

The Strategic Plan for mercury remediation at Y-12 serves as a roadmap for the many actions that must occur to complete the remediation of mercury contamination at Y-12.

Soil remediation planning has begun. Initial testing of soil treatment methods has been successful, but requires more work in terms of identifying scale-up needs and completing cost-benefit analyses. Development of innovative technologies and implementation of those technologies in the field may allow reductions in cleanup costs.

Objective 2: Reduce mercury in surface water exiting the Y-12 facility

Performance Measure:

- *Complete construction and begin operation of the Outfall 200 Mercury Treatment Facility*

Conceptual design of the facility is underway. The Mercury Treatment Facility will remove mercury from the Y-12 West End Mercury Area. The design allows for expansion in terms of accommodating a higher flow capacity as well as space for as additional unit operations if needed in the future. This facility will provide future capabilities and capacities for treatment of water generated during large-scale demolition projects.


Beta 4 facility

Objective 3: Begin to address mercury contaminated buildings

Performance Measure:

- *Begin pre-demolition activities for the mercury source buildings*

Preparations for D&D of large mercury-use facilities will include identification and analysis of treatment methods for building debris to meet regulatory land disposal restrictions; building and equipment characterization activities; development of regulatory documents; and operational activities such as asbestos abatement and removal.

This objective is a start on the next two decades of cleanup work on the ORR. Focus will shift from closure of ETTP and the final disposition of significant legacy waste issues (uranium-233 and transuranic waste) to the remaining demolition and remediation at Y-12 and ORNL.

Strategy: programmatic

Four programmatic goals have been defined to guide and strengthen the framework that supports, manages, oversees, and ultimately safely accomplishes the cleanup scope.

- **Goal 5:** *Support efficient and effective cleanup of the Oak Ridge Reservation*
- **Goal 6:** *Focus on continuous improvement in safety, security, environmental compliance, and quality performance*
- **Goal 7:** *Achieve excellence in project and contract management*
- **Goal 8:** *Optimize collaboration with external stakeholders and oversight agencies*

Goal 5: Support efficient and effective cleanup of the Oak Ridge Reservation

- *Objective 1:* Support efficient disposition of cleanup waste
- *Objective 2:* Conduct cost efficient base operations at ETTP, Y-12, and ORNL
- *Objective 3:* Routinely evaluate surveillance and maintenance plans to ensure unacceptable risks are identified and addressed

Essential activities and services are required to maintain each site in a safe and stable condition, and to support the cleanup work being performed on the Reservation. These base operations include waste treatment, processing, and disposal operations; surveillance and maintenance of inactive facilities and waste; water quality monitoring and reporting; and landlord activities such as providing security and maintaining infrastructure at ETTP. Base operations scope is a recurring, annually–funded priority at each site, based upon supporting cleanup operations, maintaining safety, and mitigating risks.

Objective 1: Support efficient disposition of cleanup waste

Performance Measure:

- *Construct Phase I of the Environmental Management Disposal Facility*

On-site disposal of CERCLA waste is provided by the Environmental Management Waste Management Facility which will be filled to capacity in the early 2020's. Construction of Phase I of the proposed new CERCLA disposal facility, called Environmental Management Disposal Facility, will involve development of the site and construction of the first two disposal cells. The disposal cell is proposed to be located near the existing Environmental Management Waste Management Facility, so that the facilities can share infrastructure and support facilities.

Objective 2: Conduct cost efficient base operations at ETTP, Y-12, and ORNL

Performance Measure:

- *Reduce costs of base operations by 5%*

Contractors will be incentivized to continually look for opportunities to perform work for the best value, resulting in an overall reduction of base operations costs to the program. Spending fewer dollars on surveillance and maintenance and other landlord activities frees up funds for environmental cleanup.

Objective 3: Routinely evaluate surveillance and maintenance plans to ensure unacceptable risks are identified and addressed

Performance Measure:

- *Partner with contractor to identify new/emerging risks from excess facilities*
- *Partner with contractor to ensure OREM baseline reflects balanced priorities between surveillance and maintenance and cleanup scope*

Surveillance and maintenance of excess facilities and inventories of legacy waste and materials contained therein is a significant portion of work under the base operations scope at each site. Many of these activities include monitoring and routine maintenance procedures as well as some non-routine measures that are planned in advance. However, many non-routine maintenance events are unforeseen. Typically, these unanticipated events are costly, and can tax already heavily burdened budgets. Therefore, it is imperative that forward-looking risk analyses be completed to direct surveillance and maintenance activities and thereby minimize non-routine events.

Goal 6: Focus on continuous improvement in safety, security, environmental compliance, and quality performance

- *Objective 1:* Integrate safety, security, and quality into all work aspects through more focused activities
- *Objective 2:* Foster a Safety Conscious Work Environment
- *Objective 3:* Implement all program activities in an environmentally sound manner
- *Objective 4:* Maintain a qualified workforce to ensure federal oversight of work performed

OREM strives daily, from the planning of projects through execution of those projects, to continuously improve performance in terms of safety, security, compliance, and quality.

Objective 1: Integrate safety, security, and quality into all work aspects through more focused activities

Performance Measures:

- *Complete the annual Integrated Safety Management System Declaration*
- *Complete key documentation to support organization standup*
- *Execute/manage annual integrated assessment schedule*

OREM understands the importance of continuous improvement and the synergy and power that results from aligning purpose, people, and values. Continuous improvement is the goal as we continue developing the necessary documents for organizational standup. In addition, OREM must focus on safety, security, and quality in all work products and activities.

Objective 2: Foster a Safety Conscious Work Environment

Performance Measures:

- *Complete a safety conscious work environment self-assessment, evaluate results, and identify follow-on actions*
- *Ensure contractors maintain an average Total Recordable Case rate of < 1.1 and a Days Away from Work, Restricted Work, or Transfer Case rate of < 0.6*

The Safety Conscious Work Environment (SCWE) self-assessment was completed in 2013 and concluded that OREM has a work environment in which workers feel free to raise safety concerns to management without fear of retaliation. While this is a positive outcome, the SCWE self-assessment did identify some concerns related to the OREM organizational culture that require attention. An SCWE Plan of Action is being developed to provide a path to strengthen the work environment for the OREM organization.

Objective 3: Implement all program activities in an environmentally sound manner

Performance Measures:

- *Meet all required environmental reporting requirements within required timeframes*
- *Receive zero Notices of Violation or other non-compliance notifications for all gaseous, liquid, and solid waste treatment and disposal facilities*
- *Maintain an active pollution prevention and waste minimization program*

OREM's most important responsibility is the protection of human health and the environment, and the organization will place a primary focus on accelerating cleanup where possible and reducing the generation and subsequent release to the environment of hazardous waste. All of the work accomplished will be done with respect to the requirements that govern our activities.

Objective 4: Maintain a qualified workforce to ensure federal oversight of work performed

Performance Measures:

- *Develop annual workforce and succession plans*
- *Ensure Federal Project Directors and their deputies are certified at the correct level and all project managers are certified at level one as a minimum*
- *Maintain 100% completion of information technology, technical qualifications, and site security training*
- *Participate in team building activities that promote collaboration and communication*

The OREM workforce is a valuable asset, and everyone must have the training and experience needed to successfully manage projects and provide effective federal oversight to the contractors performing work in Oak Ridge. The organization will continue to identify and develop employees as a part of our effort to ensure we don't lose capability when retirements occur. In addition, OREM will work to strengthen itself by fostering a professional environment that promotes collaboration and communication among each of our business units.

Goal 7: Achieve excellence in project and contract management

- *Objective 1:* Complete projects on time and within budget
- *Objective 2:* Continue to hold contractors accountable for delivering results and ensure contractors' performance is fairly evaluated and documented
- *Objective 3:* Promote the use of small business contractors

Project management sets the course for project execution and guides it to completion. Excellence in project management, and therefore contract management, will result in achieving excellence in all other goals and objectives within the program.

Objective 1: Complete projects on time and within budget

Performance Measures:

- *Maintain alignment between baselines and contracts by approving baseline change proposals soon after contract modifications*
- *Complete 90% of projects within 10% of the original cost and schedule in the Performance Baseline and address root cause of ±10% cost/schedule performance index variances promptly*
- *Submit annual fiscal year work plans for operational activities before start of the fiscal year*
- *Evaluate and update project documentation (Project Execution Plans, Integrated Project Team Charters, etc.) on at least an annual basis*

The primary challenge for the OREM program is to achieve all of its project goals and objectives despite times of fiscal constraints. OREM emphasizes balancing contract and project management with financial management to ensure we are good stewards of the taxpayer dollars entrusted to us. OREM strives to accomplish the maximum amount of work possible from the funds it receives. Therefore, it is imperative that projects are properly planned and completed on time and within budget.

Objective 2: Continue to hold contractors accountable for delivering results and ensure contractors' performance is fairly evaluated and documented

Performance Measures:

- *90% of Contractor Performance Assessment Reporting System input is provided within 30 days of performance period closure*
- *80% of contract change proposals/requests for equitable adjustment are dispositioned within 180 days*
- *100% of all Performance Evaluation Management Plans are issued unilaterally, in accordance with the contract terms*
- *90% of Fee determinations/decisions are provided within contractual requirement or the established target for each contract*
- *Establish partnering agreements with prime contractors and hold partnering meetings per agreement*

OREM relies on three primary contractors to perform a majority of the environmental cleanup work on the Oak Ridge Reservation. Effectively managing those contracts is a critical responsibility of the organization, and ensuring that the contractors remain focused on results is accomplished using the basic principles of contract management. Those principles include monitoring performance, efficiently managing contract changes, and fostering positive, teaming relationships.

Objective 3: Promote the use of small business contractors

Performance Measure:

- *Award 6% of funding to small business contractors to meet EM Headquarter's goals*

OREM understands the importance of creating an environment that maximizes participation by small, disadvantaged, and woman-owned businesses. Small business firms are critical to the success of the EM program and the broader economy, and OREM fully appreciates their significant contributions to the program's successes. OREM will continue to be a strong advocate of small businesses and will identify contracting opportunities for them while supporting the small business goals of the EM program nationally.

Goal 8 Optimize collaboration with external stakeholders and oversite agencies

- *Objective 1:* Provide public access to program information and opportunity to provide input
- *Objective 2:* Collaborate effectively with external regulatory agencies
- *Objective 3:* Maintain a proactive relationship with the Defense Nuclear Facilities Safety Board

Objective 1: Provide public access to program information and opportunity to provide input

Performance Measures:

- *Hold regular Site Specific Advisory Board meetings throughout the year; provide written responses to all recommendations within 60 days*
- *Issue the Cleanup Progress Report to the Oak Ridge Community annually*
- *Issue media announcements for all major program events*
- *Hold annual public workshop on budget development effort*
- *Participate annually in four community events relevant to the OREM mission*

The Oak Ridge community is a tremendous asset to the Environmental Management program. OREM provides many opportunities throughout the year for stakeholders to provide input on the things important to them, and in turn, OREM is responsible for communicating its progress, successes, and challenges to the public. OREM is committed to identifying additional opportunities to engage those who have an interest in our achievements.

Objective 2: Collaborate effectively with external regulatory agencies

Performance Measures:

- *Meet or successfully renegotiate 90% of all enforceable regulatory milestones with the Environmental Protection Agency (EPA) and the State of Tennessee (TDEC)*
- *Obtain formal input from EPA and TDEC on the annual budget submittal*
- *Conduct meetings, at least three times annually, with senior management from EPA/TDEC/OREM to coordinate program implementation*
- *Conduct routine project team meetings between working level staff on all cleanup projects*

The Tennessee Department of Environment and Conservation and the Environmental Protection Agency are our partners in our mission to complete the cleanup of the Oak Ridge Reservation. Without positive professional relationships with our environmental regulators we cannot succeed. OREM has committed to collaborate with the regulators by proactively engaging them throughout the process of planning our work and creating "win-win" opportunities for combined success.

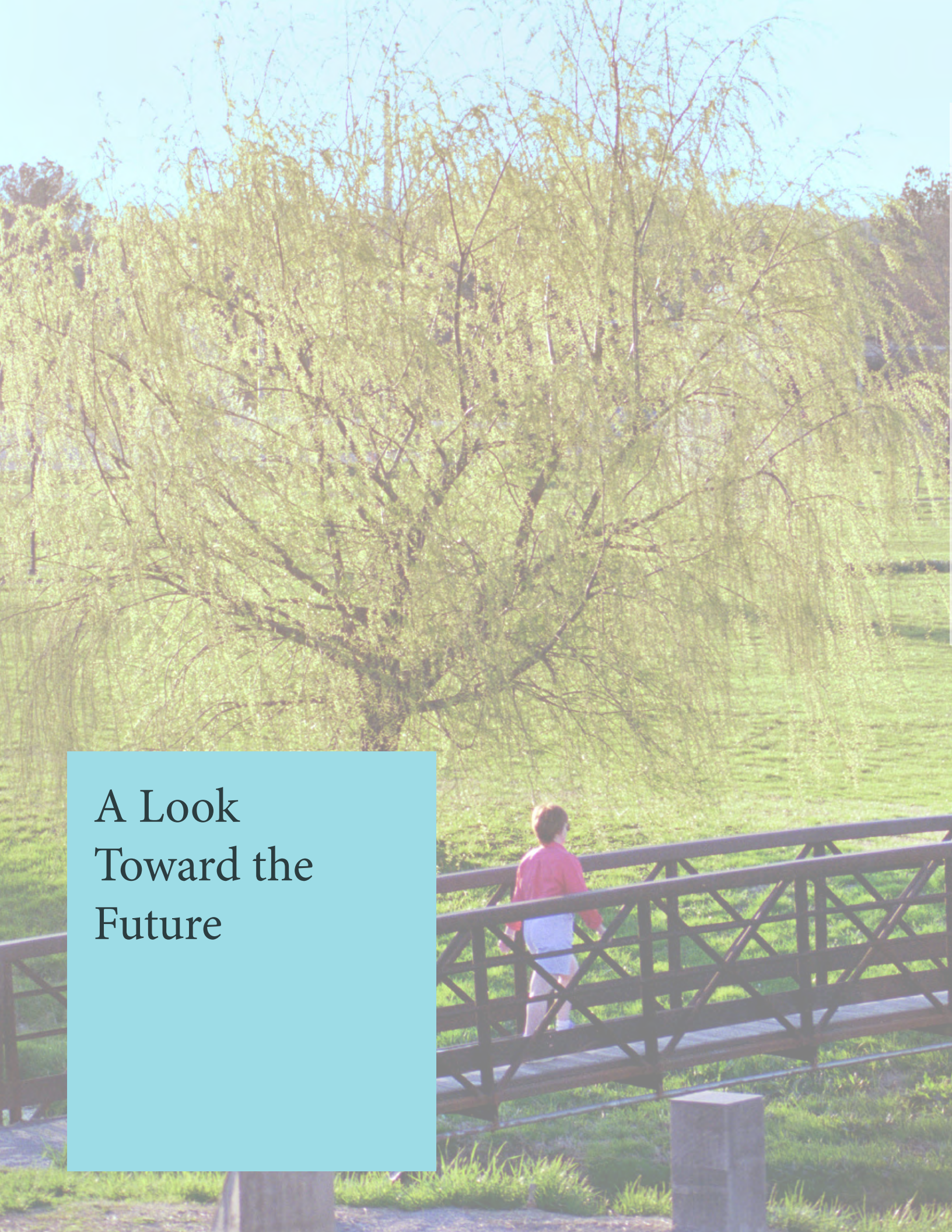
Objective 3: Maintain a proactive relationship with the Defense Nuclear Facilities Safety Board (DNFSB)

Performance Measures:

- *Work to ensure there are no DNFSB findings on OREM facilities*
- *Conduct monthly meetings with the site representatives*
- *Respond promptly to DNFSB requests, typically within 30 days*

The Defense Nuclear Facilities Safety Board is an independent organization within the executive branch chartered with the responsibility of providing recommendations and advice to the President and the Secretary of Energy regarding public health and safety issues at Department of Energy defense nuclear facilities. OREM will maintain a positive relationship by communicating project successes and challenges early and often and by promptly responding to requests for information.

"Collaboration and open communication with our stakeholders and oversight agencies adds value to the program by promoting clarity and mutual understanding."



A Look Toward the Future

Completion of the cleanup goals identified in this Program Plan will free up large portions of our budget for new goals beginning in FY 2025. Future work will focus on the demolition of facilities and remediation of environmental media remaining at Y-12 and ORNL.

Mercury use facilities at Y-12 will be demolished as will several other large facility complexes at the site.

Several reactor and hot cell facilities as well as other unique structures at ORNL will require specialized, remote handling during demolition.

Extensive soil remediation at both sites will be undertaken.

Following completion of Y-12 and ORNL demolition and remediation, we will make final decision regarding cleanup of groundwater and surface waters and begin long-term stewardship. Long-term stewardship includes land-use controls, monitoring and maintenance, and information management practices. Together, these practices ensure protection for the people and environment near our former cleanup sites.

U.S. DEPARTMENT OF ENERGY