Oak Ridge Site Specific Advisory Board Annual Planning Meeting

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OREM Mission

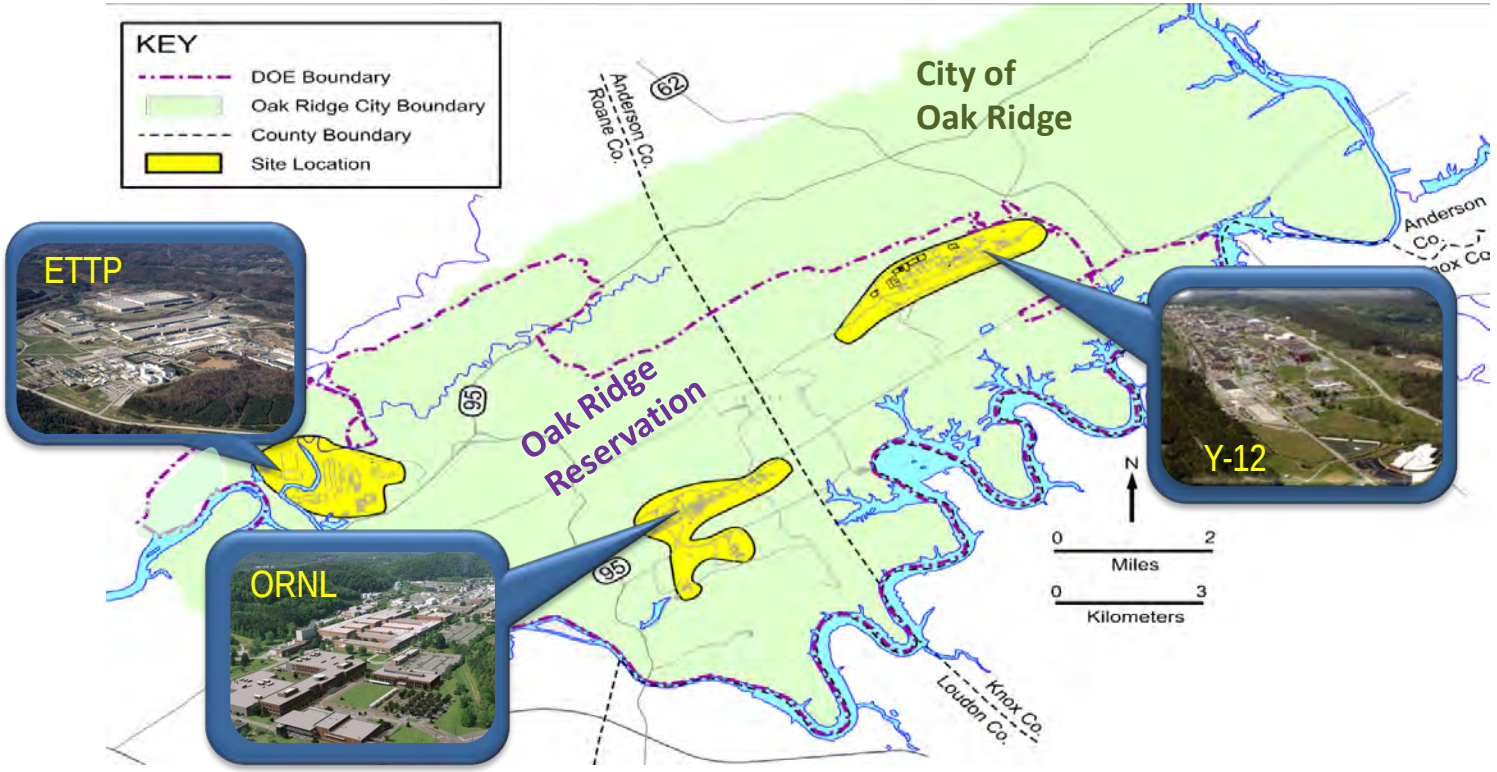
Complete the cleanup of the Oak Ridge Reservation to:

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

Program Overview

Work is organized by Cleanup Portfolios:

- East Tennessee Technology Park (ETTP)
- Oak Ridge National Laboratory (ORNL)
- Y-12 National Security Complex (Y-12) & Transuranic Waste Processing Center (TWPC)



Primary Cleanup Contractors

ETTP Cleanup and S&M

UCOR
URS | CH2M
Oak Ridge LLC

ETTP cleanup and reservation-wide surveillance and maintenance

Contract value: $2.5B

TRU Waste Processing

WAI
WASTREN ADVANTAGE, INC.

Transuranic debris processing and facility operations

Contract value: $292M

U-233 Disposition Project

ISOTEK systems

Disposition of U-233 material and management of Building 3019

Contract value: $406M

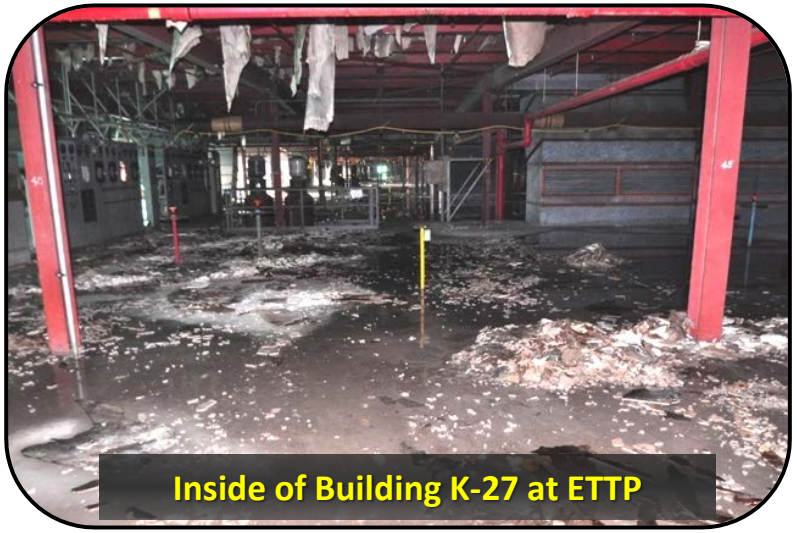
Key Program Considerations

- **Y-12 National Security Complex**
  - Environmental Risk -- Nearly 20 million lbs of mercury was used at Y-12 and ~ 10% is unaccounted for; roughly 700,000 lbs may have been released into the environment

- **Oak Ridge National Laboratory**
  - Nuclear Radiological Risk -- Over 26 million curies are currently stored at ORNL alongside billions of dollars of investment

- **East Tennessee Technology Park**
  - Lifecycle Cost Risk -- Nearly $60M is spent on minimum safe/essential services at ETTP, and as ETTP facilities continue to degrade, the cost for D&D continues to increase

Mercury removed from storm sewers at Y-12


Inside of Building K-27 at ETTP

Near-Term Cleanup Goals

- Complete demolition of K-31 and K-27 at ETTP
- Construct and operate mercury water treatment system at Y-12
- Disposition half the U-233 inventory at ORNL and prepare for processing remaining inventory
- Continue processing transuranic debris
- Prepare for transuranic sludge processing
- Continue planning for new disposal cell


K-31 at ETTP


Outfall 200 at Y-12


Tru Waste Processing Center

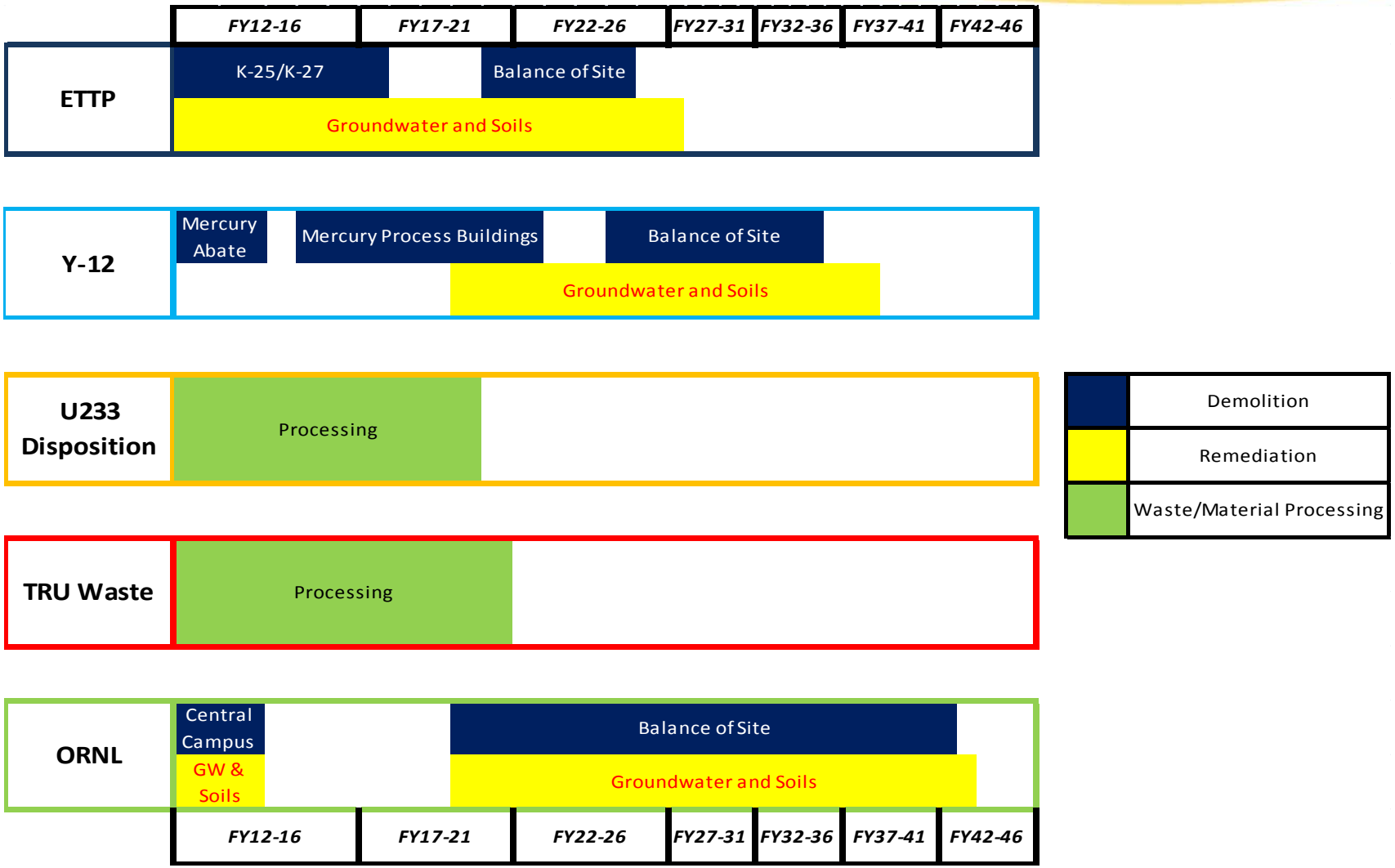
Longer-Term Plans

- Complete transuranic debris processing (~ 2018)
- Complete construction of Mercury Treatment Facility (~ 2020)
- Complete Cleanup of ETTP (~2022)
- Begin demolition of mercury buildings at Y-12 (~ 2023)
- Complete U-233 disposition (~ 2024)
- Begin operation of new disposal facility (~ 2024)
- Complete transuranic sludge processing (~ 2026)
- Begin demolition of central campus buildings at ORNL (~ 2027)


ETTP Today


Alpha 5 at Y-12

Proposed Cleanup Schedule



Program Challenges

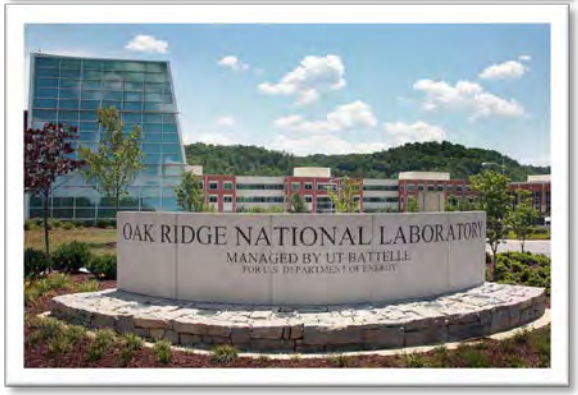
- Diverse, complex projects
- Competing priorities
- Declining budgets
- Regulator and stakeholder expectations/ commitments
- Ongoing DOE missions

U-233 Disposition

TRU Waste Processing

Positioning for the Future

- **Balancing competing risks**
  - Environmental: Y-12
  - Nuclear/radiological: ORNL
  - Lifecycle cost: ETTP
- **Optimizing progress and efficiencies while maintaining our outstanding safety record**
  - Accelerate cleanup of high risk facilities
  - Utilize our efficient and experienced workforce
- **Looking for innovative ways to perform work**
  - Challenge our approaches
  - Improve use of technology
- **Identifying near-term goals while continuing our longer-term strategic focus**



Role of the Board

- Maintain Awareness of Key Program Focus Areas
- Provide Recommendation on High-level Programmatic Decisions and Project Implementation
- Solicit Input from Broader Regional Stakeholder Community
- Participate in National Dialogues Concerning EM Program

Board Meeting Format

- What changes could be made to make the meetings more productive and beneficial?

Oak Ridge Site Specific Advisory Board

Overall FY 2014 Board Accomplishments

1. **Drafted recommendation on additional off-site groundwater migration studies (later approved by board). (EM/S) Suggested by DOE & EPA.**
2. **Drafted recommendation on additional waste disposal capacity on the ORR (later approved by board). (EM/S) Suggested by DOE, EPA & TDEC.**
3. **Follow the transition in long-term emphasis from cleanup to stewardship. (EM/S)**
4. **Held a joint meeting with the EM/Stewardship and Budget & Process Committees to develop a recommendation on the FY 2016 Oak Ridge EM budget request. Reviewed the FY 2014 ORSSAB budget allocation from DOE, and recommended distribution of funding among expense categories. Drafted recommendation on FY 2015 DOE OR EM Budget Request (with Budget & Process Committee) (later approved by board). (EM/S & B&P) Suggested by DOE.**
5. **Established an ORSSAB website on the new Internet platform that the Oak Ridge Environmental Management Program is now using. The new website will provide improved functionality and searchability, and will enhance compliance with DOE website guidance. (PO)**

Oak Ridge Site Specific Advisory Board

Overall FY 2014 Board Accomplishments

6. **Published four Advocate newsletters. Began distribution of the Advocate newsletter to twenty-five libraries in the nine-county region around the Oak Ridge Reservation. (PO)**
7. **Made several improvements to the ORSSAB exhibit at the American Museum of Science and Energy. (PO)**
8. **Review the final SSAB bylaws template that DOE Headquarters is developing, and assist in restructuring the ORSSAB Bylaws to conform to the template. (B&P)**

Suggested Priorities for the FY 2015 Work Plan by DOE, EPA, and TDEC

Y-12 Mercury Cleanup Strategy and Plan for a Water Treatment Plant at Y-12

DOE request

DOE is working with EPA and TDEC to complete design and construction of a water treatment plant to control mercury releases at Y-12. During 2015, a Proposed Plan will be issued to obtain public input on alternative treatment approaches. SSAB focus on this project is requested.

EPA request

The draft strategic cleanup plan for mercury releases at Y-12 is under review and has not been finalized. Key issues in the mercury strategy include construction of a surface/storm water runoff treatment plant prior to cleanup of mercury sources that could liberate mercury contamination and increase levels of ongoing mercury releases offsite.

Other important aspects of the strategy include balancing building demolition activities with cleanup of mercury sources in underlying soils and substructures in a phased approach from west to east. Soil cleanup will not be deferred until after completion of all building demolition activities.

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Suggested Priorities for the FY 2015 Work Plan by DOE, EPA, and TDEC

Y-12 Mercury Cleanup Strategy and Plan for a Water Treatment Plant at Y-12

EPA request (continued from previous slide)

The strategy should address residual free phase mercury present in soils and the substructures below the planned zone of soils remediation (i.e., the uppermost 2 feet). The deeper zone of high concentrated mercury source material and contamination should not be left in place without consideration of alternatives for its cleanup. The SSAB's involvement in these strategic plans will assist in developing remediation strategies to protect human health and the environment.

TDEC request

Releases of mercury from Y-12 continue to exceed State and EPA water quality criteria. DOE submitted a final Remedial Design Work Plan to the State in April 2014 that was approved in May 2014. Construction of the Outfall 200 water treatment plant is crucial to the continued cleanup efforts at Y-12 and the reduction of discharges into East Fork Poplar Creek and beyond. This system needs to be in place prior to the beginning of the decontamination and demolition of Beta 4, Alpha 5, and Alpha 4 in order to capture as much mercury discharge from those sites as possible. Input from the SSAB on this project and strategies for mercury waste management would increase public awareness of the nature of the mercury problem and the path forward for mercury remediation.

Suggested Priorities for the FY 2015 Work Plan by DOE, EPA, and TDEC

Sufficient Waste Disposal Capacity on the Oak Ridge Reservation (ORR)

DOE request

Current schedules call for issuance of a Proposed Plan for addressing future disposal capacity needs in the spring of 2015. DOE will seek SSAB input on both the desirability of constructing additional disposal capacity and input on potential facility locations.

EPA request

Planning is underway to prepare and submit a revised Remedial Investigation/Feasibility Study for a new onsite land disposal facility. Issues raised in the review pertain to Applicable or Relevant and Appropriate Requirements (ARARs) for landfill waste water discharges, lessons learned from the existing Environmental Management Waste Management Facility (EMWMF) Landfill, and the hydro-geologic setting of the proposed onsite landfill. The alternatives will include combined waste water discharges from both the current operating landfill and the proposed landfill. The SSAB's involvement in the issues raised in the review of the evaluation of alternatives will assist in efforts to incorporate input from the greater Oak Ridge community into the ongoing remedy evaluation and selection process.

Suggested Priorities for the FY 2015 Work Plan by DOE, EPA, and TDEC

Sufficient Waste Disposal Capacity on the ORR

TDEC request

Ongoing siting and design of the Environmental Management Disposal Facility (EMDF) will need to be evaluated to ensure lessons learned from the construction and operation of the EMWMF are taken into account when planning for this new facility. The SSAB may assist in a programmatic look at future onsite waste disposal on the ORR, including topics like potential facility location, the viability of volume reduction technologies, and offsite versus onsite disposal for various types of waste.

This should include the suitability of the onsite disposal for the mercury contaminated soils and debris. If deemed suitable, acceptable levels of mercury for disposal and the need for the treatment of effluents for mercury must be considered.

Suggested Priorities for the FY 2015 Work Plan by DOE and EPA

Completion of the East Tennessee Technology Park (ETTP) Cleanup

DOE request

During FY 2015, DOE expects to issue a Proposed Plan and Record of Decision for final cleanup of the land area surrounding the former K-25 Gaseous Diffusion Plant. These documents will stipulate final requirements for soil and burial ground remediation along with any land use controls necessary to ensure future protectiveness. SSAB review and comment on these documents is requested.

EPA request

The Remedial Investigation/Feasibility Study for Zone 1 has been submitted and is under EPA review and is focused on soils. The opportunity for formal public participation will be during the Proposed Plan stage of the process. The review and comment on the Proposed Plan is an important point to solicit community feedback for this final CERCLA* decision. Where funding opportunities arise, the SSAB may assist in evaluation the possibility of completing ETTP cleanup before the 2020s.

*Comprehensive Environmental Response, Compensation, and Liability Act

Suggested Priorities for the FY 2015 Work Plan by DOE

Selection of a Remediation Strategy for Trench 13 in Melton Valley

DOE request

DOE and the State are engaged in negotiations to develop a path forward for a unique waste stream located in Melton Valley. Early in 2015, DOE would like to brief the SSAB on the challenges associated with this burial trench and receive a recommendation on future management of these wastes.

Suggested Priorities for the FY 2015 Work Plan by DOE

Provision of Input into the FY 2017 Budget Prioritization Effort

DOE request

ORSSAB's annual participation in this effort will remain important, particularly given the tight fiscal environment anticipated in upcoming years and the related necessity to establish program priorities strategically.

Early in calendar year 2015, DOE would like to brief the SSAB on all major projects underway and obtain project prioritization input.

Suggested Priorities for the FY 2015 Work Plan by EPA and TDEC

ORR Groundwater

EPA request

The ORR groundwater strategic plan has been finalized. The SSAB should work with DOE to incorporate the results of this plan in the long-term schedules for cleanup. Current actions underway are focused on the potential for offsite groundwater contaminant migration. Identifying specific high priority plume projects in the Federal Facility Agreement schedules should enhance planning for the eventual attainment of the Government Performance Results Act goal of "Groundwater Migration Under Control."

TDEC request

Groundwater contamination from the ORR has been documented across the Clinch River. The objectives of the ORR Groundwater Strategy Document were to assess potential threats to offsite public health and the environment due to groundwater contamination from sources on the ORR and to aid in selection of remedial actions. Current efforts are focused on sampling of offsite locations, set to begin by January 30, 2015. The sampling effort is a step toward identifying any significant offsite groundwater contamination.

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Suggested Priorities for the FY 2015 Work Plan by EPA and TDEC

ORR Groundwater

TDEC request (continued from previous slide)

The separate modeling effort is expected to act as a useful tool for identification of data gaps and limitations in current ORR conceptual models of groundwater flow and contamination. Continued input from the SSAB on the ORR groundwater strategy and these projects will maintain public awareness concerning the need to better understand and evaluate the nature and extent of ORR groundwater contamination.

Suggested Priorities for the FY 2015 Work Plan by TDEC

Processing and Disposition of Transuranic Waste

TDEC request

TDEC is working with DOE to establish the path forward to disposition of transuranic sludge stored in the Melton Valley Storage Tanks. Though currently stable and safely stored, this waste stream represents one of the highest levels of risk to the people and the environment. The successful design and construction of the sludge treatment facility require a steady fiscal environment. The retrievably stored transuranic waste in Trench 13 would need to be processed at the Transuranic Waste Processing Center before final disposition.

Input from the SSAB on these matters will increase public awareness of transuranic wastes in need of disposition.