

# 2.0 Oak Ridge Comprehensive Closure Plan

## 2.1 CURRENT STATUS SUMMARY

The ORR cleanup effort historically has attempted to conduct cleanup in all areas of the reservation concurrently. The result of this approach is that resources are diluted and not sufficiently focused on closure. Regulatory agreements reflect this “spread the work around” approach.

In addition, substantial scope has been added to the program over the past 2 years. Examples of \$4.6 billion of recently added new scope are:

- Uranium Programs Depleted Uranium Hexafluoride (DUF<sub>6</sub>) Conversion—\$2.1 billion (added when Congress enacted legislation to convert DUF<sub>6</sub> tailings to oxides),
- Portsmouth Gaseous Diffusion Plant D&D—\$1.7 billion (added when USEC declared the facility excess),
- Uranium Programs—\$0.5 billion (added when Congress directed DOE to integrate the Nuclear Energy program with EM), and
- Portsmouth and Paducah Disposal Facilities—\$0.3 billion (added when privatization money was provided for on-site cells for cleanup waste).

Consequently, the schedule for cleanup extends too far into the future. Exacerbating the drawn-out schedule is the reduced funding caused by high base operations costs such as security, waste storage, and surveillance and maintenance that do nothing to eliminate risk. Progress has been made in reducing these base operations costs, but more must be done to release funds for closure. By finding efficiencies, eliminating scope, and reducing the frequency of certain activities, the costs have been reduced, however, to eliminate the substantial remaining costs, closure is required.

## 2.2 ACHIEVING CLOSURE

To overcome these problems and accelerate closure, ORO has taken a hard look at the program and developed this comprehensive closure plan, which incorporates an accelerated, risk-based strategy that ensures a strong commitment to excellence in safety; and:

- focuses on the safe completion of Melton Valley remedial actions to stop the major off-site releases;
- closes ETTP to reduce environmental and safety risks and to eliminate infrastructure costs;
- disposes of legacy low-level waste (LLW) in the EMWMF at a reduced cost;
- completes ongoing, high-priority projects that reduce risk; and
- redefines the regulatory strategy to focus on closure end points and not process.

The accelerated strategy improves contract management by:

- focusing on completion and not intermediate milestones;
- structuring contractor fees tied to completion;
- including expectations for excellence in safety, health, and compliance; and
- defining DOE’s role in oversight and earned value verification.

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This approach aligns DOE's internal management processes with a closure contract by:

- applying the project management principles of DOE Order 413.3,
- applying Integrated Safety Management System (ISMS) principles at the earliest time in the planning process, and
- identifying DOE lead responsibilities that will be integrated into the overall closure baseline.

This plan realigns the scope to be consistent with an accelerated, risk-based closure mission by

- transferring the responsibility for newly generated waste to the generators, and
- reducing infrastructure responsibilities to focus resources on closure.

The details of the ETTP and Melton Valley accelerated plans are provided in Sections 3.0 and 4.0, respectively; however, the following section provides a brief overview of these plans, the Balance of the EM Program, the overall schedule, and the funding profiles required to implement the work.

### **ETTP Proposal**

In addition to the environmental risks at ETTP, there are safety and financial risks inherent in the aging site infrastructure. Annual costs for maintaining the ETTP infrastructure, including fire protection; utilities; real property management; Environment, Safety, and Health (ES&H); and power operations constitute almost 60 percent of the total ETTP budget. This is a significant cost to maintain an infrastructure that will eventually be demolished as a part of site closure. Under the base case, significant costs will also be incurred for major capital improvement projects necessary to maintain the facilities in a safe and stable configuration before demolition.

The current mission at ETTP is multi-focused, addressing site closure and cleanup as well as reindustrialization. The base case completion date for ETTP closure is 2016 at an estimated cost of \$2.4 billion.

By focusing on closure, ETTP completion can be achieved by 2008 at an estimated total cost of \$1.5 Billion. The K-25/K-27 Buildings will be demolished 18 months ahead of the base case schedule, mortgage costs will be reduced, and LLW will be disposed of by 2004. Capital improvement projects in the base case will be eliminated resulting in substantial cost avoidance.

### **Melton Valley Proposal**

At the ORNL, past waste storage and disposal practices significantly contributed to the existing risks in Melton Valley. Melton Valley contains 140 acres of unlined waste units, including burial grounds, seepage pits, and trenches, that have received over 2 million curies of radioactive waste from past disposal operations. Melton Valley also contains contaminated surface and floodplain soils, deep hydrofracture injection and monitoring wells that are potential pathways for contaminants into surface water and shallow groundwater regions, and buried TRU waste. Subsurface waste units occasionally become inundated with water, and buried waste containers are deteriorating, increasing the potential for additional contaminant migration. In summary, Melton Valley contributes 90 percent of the strontium-90 and 67 percent of the tritium discharged from DOE property into the Clinch River, a drinking water source and prime recreational area. Surface water contamination exceeds recreational risk goals and ambient water quality criteria (AWQC), and groundwater contamination exceeds Safe Drinking Water Act maximum contaminant levels (MCLs).

In September 2000, the Melton Valley Record of Decision was signed by DOE and state and federal regulators. Under the base case, remediation activities are scheduled for completion in 2014 at a total cost of \$345 million.

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By focusing on the Melton Valley, cleanup activities can be completed by 2006 at a total estimated cost of \$260 million. The accelerated Melton Valley closure plan includes hydraulic isolation of burial grounds, pits, and trenches and demolition of facilities with disposal of waste in the EMWMF. In addition, the accelerated closure plan includes soil and sediment removal with disposal in the EMWMF, retrieval and disposal of buried TRU waste, and plugging and abandonment (P&A) of hydrofracture injection and monitoring wells. Accelerated closure of the Melton Valley sites will mitigate contaminant migration to the Clinch River, a major off-site surface water body, ultimately reducing existing risk to acceptable levels. Accelerated closure will also significantly reduce lifecycle surveillance and maintenance (S&M) costs.

### Summary Schedule and Assumptions

The summary schedule (Fig. 2.1) compares the base case to the accelerated case and highlights the early completion dates for major elements of the program.

Key program assumptions are:

- The pending United States Enrichment Corporation (USEC) lease at ETTP will terminate by the end of FY 2005.
- The end state for ETTP is a private sector industrial park that requires no on-site federal presence.
- The end state for Melton Valley is a waste management area that requires long-term stewardship.
- Remediation will be performed under CERCLA, but the regulatory strategy will focus on closure.
- An innovative contracting strategy will be executed in the timeframe needed for implementation.
- No additional scope will be transferred to the EM program, EM retains the funding for scope transferred to other programs, and separate funding will be required to cover legacy workers' compensation claims (potentially as high as \$200 million).
- Stable funding will be provided to implement the Comprehensive Closure Plan. The current situation at ETTP may require tracking four different types of funds (D&D Funds, Defense Funds, Other Uranium Maintenance Funds, and Expedited Cleanup Funds). A single fund type would simplify execution of the work. In addition, this Comprehensive Closure Plan assumes that EMWMF expansion is accomplished using appropriated funds. If privatization funds were available, the net funding required from the Expedited Cleanup Fund could be reduced by approximately \$100 million.

### **2.3 PROGRAM FUNDING PROFILE COMPARISON**

To establish a reference point for the acceleration opportunities described in this proposal, a base case funding profile (Fig. 2.2) was developed that sequences the entire scope of the EM Program against annual funding targets tied to the FY 2003 President's Budget. This base case funding profile differs from the current lifecycle baseline and the information in the Integrated Planning, Accountability, and Budgeting System (IPABS) because of the:

- addition of \$552 million for the demolition of leased facilities at ETTP, and
- addition of \$78 million of appropriated funding for the expansion and closure of the EMWMF instead of privatization funding.

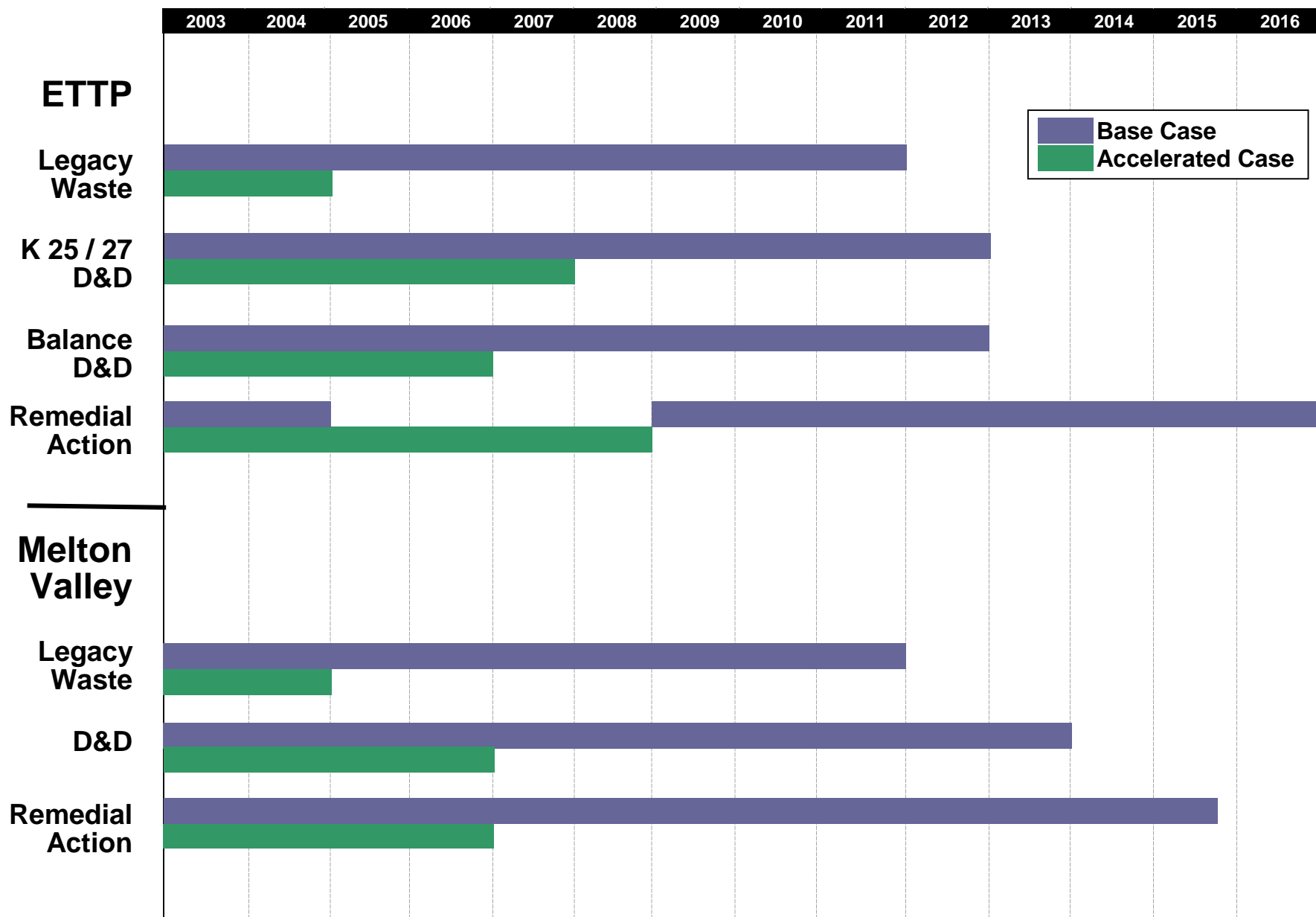


Figure 2.1 Cleanup Schedule Comparison



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To demonstrate the benefits of this proposal, an accelerated case funding profile (Figure 2.2) was developed that sequences the entire scope of the EM Program based on the closure strategy. The accelerated case funding profile contains the total funding needed to execute this work, the savings that will be reinvested in cleanup, and the net funding required from the Expedited Cleanup Fund.

**This proposal decreases the cost of the lifecycle baseline by \$2.2 billion and reduces the schedule by 5 years. Transfer of selected facilities for reindustrialization could achieve additional savings.**