

## EXECUTIVE SUMMARY



***Accelerating Cleanup: Paths To Closure reflects the most recent evolution of DOE's ability to accurately project the cost, schedule, and scope of its massive cleanup effort (available at <http://www.em.doe.gov>).***

***The goals of the DOE-EM cleanup program include:***

- ***Cleaning up and transitioning the majority of operating sites to safe, acceptable conditions by 2006***
- ***Expediting cleanup of remaining sites***
- ***Solving complicated and intractable problems encountered during cleanup activities.***

The Department of Energy (DOE) Assistant Secretary for Environmental Management (EM) is responsible for the largest environmental management program in the world—the legacy cleanup of 50 years of U.S. Government nuclear operations and weapons production. Resources for cleanup are limited, programmatic risks are often high, and schedules for meeting compliance agreements are often very ambitious.

The DOE-EM Office of Science and Technology (OST) management approach outlined in the *OST Management Plan* will facilitate and guide OST management at both Headquarters and Field Offices. Implementing this *Management Plan* will provide the program and business management foundation needed for OST to manage and guide effective cleanup approaches, and develop and select advanced technologies needed to reduce the risk, baseline costs, and schedule of the DOE cleanup plan described in *Accelerating Cleanup: Paths to Closure* (June 1998).

### ***EM PROGRAM GOALS***

Cleanup activities required to achieve the EM Program goals are described in *Paths to Closure*. The *Paths to Closure* document identifies hundreds of needs for new enabling technologies, additional data, and additional knowledge and understanding required to develop alternative approaches that can reduce programmatic risk for EM cleanup activities.

These goals will be accomplished via DOE policies for contract reform, privatization of cleanup work, and performance-based procurement. Effective development and integration of science and technology (S&T) solutions, as well as rapid progress in technology commercialization, are also key to EM's ability to achieve its vision. The *OST Management Plan* provides a business management framework to implement EM's strategic vision and the technical program goals for OST, as described in the *EM Science and Technology Strategic Plan* and *EM Research and Development Program Plan*.

### ***EM S&T OBJECTIVES***

DOE-EM and OST management activities are based on achieving four critical objectives that S&T investments must attain to support successful mission completion. These are:

- Meet the highest priority cleanup project needs, including those on the critical path to site closure and those representing major technology gaps in project completion
- Reduce the cost of EM's costliest cleanup projects

- Reduce technology risks (i.e., the programmatic risk that critical cleanup activities will not be completed on time or within budget due to a technology deficiency)
- Accelerate and increase technology deployments by bridging the gap between development and use.

To attain these objectives, EM S&T investments must be planned and managed by an interactive, coordinated partnership of EM cleanup project managers and stakeholders.

## **VISION AND MISSION: Focus and Purpose for S&T Investments**

### **Vision for EM Investments in S&T**

EM S&T investments, functioning as an integral part of EM programs, provide the scientific foundation, new approaches, and new technologies to engender significant risk, cost, and schedule reductions for EM mission completion. The strongest advocates of EM S&T activities are the EM cleanup project managers, regulatory agencies, and community groups.

### **Mission of EM Investments in S&T**

The OST mission is to provide the full range of S&T resources and capabilities, from basic research to development, and from demonstration and deployment to technical assistance, needed to deliver and support fully developed, deployable scientific and technological solutions to EM cleanup and long-term environmental stewardship problems.

## **STRATEGY: Operating Principle and Values to EM**

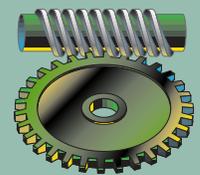
The fundamental operating principle and overall objective of EM S&T investments is to provide, in a timely manner, the technologies and support required for EM mission completion. Accordingly, EM S&T investment activities will be continually evaluated against the following values to ensure that the program remains focused on the primary operating principle:

- **Solution Driven** - Activities will be focused to support implementation decisions, create solutions to difficult problems, enable significant program cost and duration reduction activities while maintaining or enhancing safety, or fundamentally transform the nature of the problem
- **Fully Integrated with Cleanup Programs** - Activities will be linked directly to cleanup program goals, with financial accountability transitioning from S&T funding to the cleanup projects as technologies move toward implementation

*EM S&T investments will provide the technological foundation ...*

*... while OST will manage the program resources and capabilities to ensure successful site cleanup.*

*Solution-Driven*



*Fully Integrated*





*Credible Decision Process*



**EM investment philosophy is founded on four values: solution-focused activities, direct linkage with cleanup goals, full scope from research through demonstration, and positive and purposeful direction.**

**The Focus Area-centered approach, being user-driven, provides realistic solutions to real-world site problems.**

- **Comprehensive in Scope** - Activities will cover the full range of S&T, from basic research to technology development, and from technology demonstration to technical assistance supporting implementation
- **Credible Decision Process** - Processes used to establish priorities, set program and project direction, allocate funding, and select project teams are based on clear criteria and are applied in an open, transparent manner.

**EM FOCUS AREAS:  
Solution Providers**

The OST Management Plan identifies EM problem areas and the business management approach being used to determine and maximize the impact of EM investments. The investment portfolio, based on EM’s \$1.2 billion investment strategy for the next 5 years (4 percent of EM’s total budget), is organized into five major problem areas. These are displayed in Figure ES-1, each with a Lead Site Focus Area. Detailed investment information for each problem area is contained in EM Problem Area Roadmaps (i.e., Focus Area Multi-Year Program Plans). The OST Management Plan addresses cleanup life-cycle activities, from science through deployment assistance, designed to meet the needs of the effort’s project manager. The Management Plan also references other DOE program elements and Federal agencies with research contributions to the EM cleanup effort.

The Focus Area concept was introduced in 1994. This EM approach to research and technology development and deployment will ensure that OST programs remain focused on EM’s most pressing needs. Focus Areas are the primary management entities for implementing the DOE-EM and OST mission and strategies. Each Focus Area addresses one major EM problem area, as seen in Figure ES-1, and provides responsive, technically defensible solutions for cleanup and environmental stewardship at DOE sites.

<b>Problem Areas</b>	<b>Focus Areas (Lead Location)</b>
<b>Mixed, Low-level, and Transuranic (TRU) Waste</b>	<b>Mixed Waste FA (Idaho)</b>
<b>High Level Waste</b>	<b>Tanks FA (Hanford)</b>
<b>Environmental Restoration</b>	<b>Subsurface Contaminants FA (Savannah River)</b>
<b>Deactivation and Decommissioning</b>	<b>Deactivation and Decommissioning FA (FETC)</b>
<b>Plutonium and Nuclear Material</b>	<b>Plutonium and Nuclear Material FA (Idaho)</b>

Figure ES-1 - Focus Areas address DOE’s key problem areas.

Implementing OST programs through the Focus Area-centered approach ensures that each problem area has a complete life cycle of cleanup support activities, from science through deployment assistance, and that each problem area is managed as a comprehensive investment throughout the solution maturation process. This approach, depicted in Figure ES-2, allows the effective integration of a range of S&T initiatives that identify, expedite, and deliver solutions to meet end-user needs. It is user-driven in that end users have a significant role in identifying and prioritizing problems and needs throughout the solution life cycle.

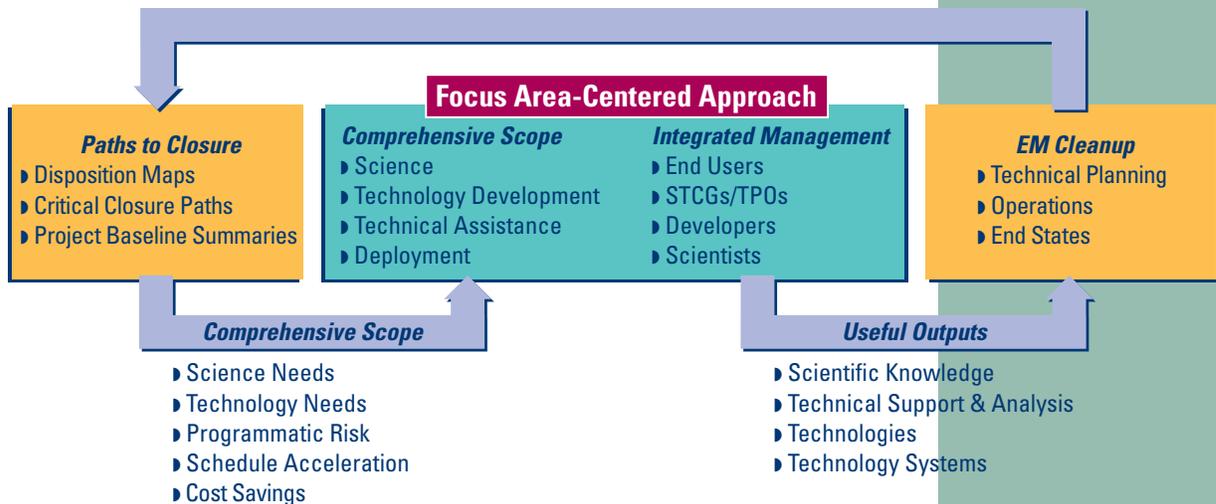


Figure ES-2 - The Focus Area-centered approach is integrated with end users and is solution-driven.

Focus Areas also evaluate and test commercially available technologies that may meet EM needs. Each Focus Area works with the research and development (R&D) community to transition promising initiatives to technology developers and integrators of technology-based products and services for EM site markets. Focus areas also link vendors of advantageous off-the-shelf technologies with users at EM sites.

**OST MANAGEMENT PLAN:  
Focus Area-Centered Management Guidance**

The Management Plan provides a fully integrated business management approach to ensure that OST work is concentrated on the highest priority needs, commitments are made and delivered to stakeholders, cost savings opportunities are pursued, and technology risks are minimal. Implementation of this Management Plan will facilitate EM’s aggressive, accelerated site cleanup plan. Accelerated cleanup will reduce health and environmental risks, open many sites for community re-use, and achieve compliance with Federal and state laws and agreements.

**The Management Plan’s human face:**

- **The DOE site manager, who has overall site program responsibility**
- **The DOE project manager, who has site project-specific responsibility**

- **The M&I and M&O contractors, who manage and operate site-specific activities**
- **The end users, who help develop and then deploy the appropriate problem-solving technology.**

At each Field Office, a DOE site manager is responsible for all on-site EM programs, projects, and operations; DOE project managers are responsible for specific projects. Site work, including technology development, demonstration, and deployment activities, is typically managed and executed through site management and integration (M&I) and management and operations (M&O) contractors. The cleanup project manager is the “customer” (often called the “end user” or “problem holder”) of EM’s S&T development efforts. Remediation contractors and private companies that bid on jobs from site contractor organizations (i.e., second-tier contractors) or where DOE plans to privatize work, are also considered end users.

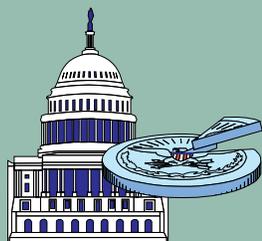
This Management Plan stresses the supplier-customer relationship, and describes an improved approach to planning and managing OST investments to facilitate that relationship and provide integrated solutions to cleanup problems.

### **PROGRAM MANAGEMENT: Planning, Budgeting, Execution, and Evaluation**

Management activities are presented in the OST Management Plan within the framework of OST’s primary business processes of program planning, budgeting, execution, and evaluation, and are keyed to the EM Integrated Planning, Accountability, and Budgeting System (IPABS).



**Planning is real-world,  
not ivory-tower theory.**



**Budgeting is based  
on needs prioritization.**



**Executing programs  
is left to experts.**

#### **Program Planning**

Planning S&T activities to meet site needs requires a close working relationship among OST, DOE sites and problem holders, and the private sector. Fully integrated, Multi-Year Program Plans are formulated to solve identified site problems. Partnerships are formed and technology solutions are integrated with cleanup projects, thereby assuring a well-defined program that meets end-user needs.

#### **Program Budgeting**

Formulating the OST budget involves an analytical approach to prioritize S&T activities responsive to the EM mission, goals, and site-specific needs. The complexity and duration of the EM cleanup effort, combined with budget constraints and regulatory requirements, requires OST to carefully prioritize projects to address EM’s highest priority national needs. OST also emphasizes end-user participation in developing and reviewing OST plans and budget requests.

#### **Program Execution**

OST program execution is facilitated by the most qualified and knowledgeable scientific researchers and technology developers, both internal and external to the DOE complex, as well as private sector vendors and contractors. Focus Areas work closely with those sites where technologies are to be implemented to ensure adherence to site-specific technical and safety requirements.

## Program Evaluation

Evaluating OST program performance and impact on EM cleanup is critical to effective overall OST management. OST's program evaluation process includes external programmatic and technical merit reviews. Periodic reviews during program execution inform end users of the status of S&T activities. Reviews of technical, cost, and schedule performance baselines are emphasized, and any subsequent baseline changes are determined by site, Focus Area, and OST management personnel. OST is developing and refining performance metrics with EM end users to measure the benefits derived from S&T activities, and to evaluate the impact on EM's cleanup goals.

### **OST MANAGEMENT PLAN: The Topology**

The OST Management Plan is divided into five sections:

- Section 1: Plan purpose and scope
- Section 2: Integrating OST's mission, vision, and strategies with those of DOE-EM
- Section 3: Structure and definition of the Focus Area-centered approach
- Section 4: Principal OST management activities and business processes
- Section 5: Summary of OST information management and communications functions.

Several appendices, located after Section 5, provide additional detail and amplification to the subject matter presented in the main body of the *Management Plan*.

The Focus Area-centered approach and the participants' adherence to the sound management practices presented in the *Management Plan* will allow OST to continually improve its contributions to EM's aggressive accelerated site cleanup plans.



***Evaluation is ongoing  
to ensure success.***

***Use of the Focus Area-  
centered approach  
+  
Sound management  
practices  
=  
Clean up program success.***