

Chapter 5

A Management System
to Support the EM
Program

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To support the conceptual goals of accelerated cleanup and cost savings presented in *Paths to Closure*, the Office of Environmental Management (EM) has developed a new management system that consolidates planning, budgeting, and management functions. The new system, the Integrated Planning, Budgeting and Accountability System (IPABS), makes a series of fundamental changes and improvements in EM’s business processes. For the first time, EM will use a single framework for all its activities, linking planning, performance measurement, and the budget formulation and execution processes. This chapter presents the major components and processes of IPABS, which will support EM and its closure strategy:

- Baseline Management
- Program Management Tools
- Performance Measurement
- Budget Formulation
- Management Initiatives
- Program Evaluation

Exhibit 5-1 below presents a side-by-side comparison of the most significant changes in the EM program management system. The sections that follow present more detailed discussions of IPABS advancements in each of the areas described above.

Exhibit 5-1
Fundamental Changes in EM Management Through IPABS

Former Process	IPABS Process
Activity-based	Project-based
Multiple database systems	One integrated set of corporate data
Multiple large data calls each year	Single large annual data call (with smaller updates as necessary)
Three year budget focus	Life-cycle focus integrated with three-year budget window
Overlap between Headquarters and Field management roles	Field focus on project management. Headquarters focus on policy, planning, integration, high-visibility projects, and programmatic risk mitigation

EM developed the changes and improvements in the management system in the context of the draft cleanup strategy. Consequently, EM considered the implications of each change on all aspects of its business processes. The final IPABS vision represents an integrated process, resulting in improved efficiency. Exhibit 5-2 presents a summary view of the IPABS process.

5.1 Baseline Management

A key element of IPABS is the baseline management framework that organizes the scope, schedule, and cost of all future cleanup activities into discrete projects. Historically, during the nuclear weapons development and production phase, sites used level-of-effort management approaches. In contrast, site baselines, built from individual project baselines, are the foundation for *Paths to Closure*. The focus on projects will enable more effective Field management, resulting in greater cost savings and accelerated completion. In addition, EM has established a change management process to track changes to the project structure and to maintain a consistent focus on achieving enhanced performance goals.

5.1.1 Integrated Site Baselines

The overall EM management strategy begins with the development of site baselines. Sites are responsible for developing detailed project baselines for all field projects, consisting of activities conducted in the EM program (e.g. environmental

restoration, waste management, infrastructure, and long-term surveillance and monitoring). Each project must have a defined scope that guides managers in implementing each step of the cleanup. In addition, each project includes a quantitative expression of the engineering approach (i.e., scope, technical approach, schedule, cost requirements, and uncertainties) against which the status of resources and the progress of the project can be measured. All EM projects at a site comprise the integrated site baseline. Site baselines span the life cycle of all field projects at the site and present a clear definition of overall cleanup requirements, individual cleanup milestones, critical interactions between projects, and costs over time.

5.1.2 Baseline Validation and Change Control

Once a site develops its integrated baseline, it is responsible for validating and maintaining it to reflect the most current state of planning at the site. The objective of baseline validation is to ensure that the baseline is defensible relative to scope, schedule, and cost. The validation process requires an examination of the detailed scope of work and all assumptions used as a basis for estimating costs. EM Headquarters provided sites with standards for a project validation process. These standards will ensure that sites conduct consistent validations across the program.

A site must also reflect any changes to its planning baseline in its integrated baseline. EM has developed the outline for a disciplined change control process to manage and document changes to site baselines. A detailed process is under development. The process addresses three types of change that represent different levels of impact to the EM program (see Exhibit 5-3). Depending upon the type of change, different change control procedures are required. This tiered approach allows the sites freedom to manage their baselines efficiently, while enabling Headquarters to review changes that affect the entire program.

Exhibit 5-3

Levels of Change in EM Baseline Change Control Process

Change Type	Description	Requires HQ Approval
1 EM Policy Decisions	Policy decisions affecting the entire EM program or multiple sites	Yes
2 Major Baseline Adjustments	Changes to project end states, end dates, milestones on high-visibility projects, and changes that affect multiple sites	Yes
3 Limited Baseline Adjustments	Limited changes affecting a single project's or site's scope, cost, or schedule	No

5.2 Program Management Tools

The integrated site baselines are the basis for a consolidated planning and program management capability in the Field and at Headquarters. EM will maintain summary level information on all Field projects and site planning information in a single database. EM will update this data primarily through a single annual data call, replacing the multiple, disconnected data calls required to support the previous data management systems. This database will enable EM to maintain more consistent information over time.

The data revolves around a set of management tools: 1) Project Baseline Summaries (PBSs), 2) Waste/Material Disposition Maps, 3) Critical Closure Path Models, and 4) Programmatic Risk Assessments. Together, these tools enable EM to plan, budget, and execute work more effectively. They also allow EM to focus management attention on projects critical to the completion of the cleanup mission and direct technology development efforts to support those critical projects.

5.2.1 Project Baseline Summaries

Field projects that have common attributes, such as a common end state, geographic location, or activity type are typically organized into IPABS projects (see text box). The individual Field projects which make up integrated site baselines are organized into IPABS projects for purposes of planning, budgeting, and management at the complex-wide level (see Exhibit 5-4 below). The Project Baseline Summary (PBS) is the single, summary-level report that describes the major management characteristics of each IPABS project.

The PBS functions as the main source of project information at the Headquarters level and includes the scope, schedule, cost, life-cycle performance measurement metrics and annual performance targets, financial history and budget, and other information such as risk and assumptions. PBSs maintain data at a summary level to facilitate planning and program management at the national level, and they are directly linked to the more detailed project baselines developed at the site level. Summary level PBS data will be used for budget formulation and project performance tracking.

Projects: Building Blocks of the EM Program

All EM projects must have:

- Logically organized components
- A defined start and end date
- A defined end state
- A reasonable size
- Milestones that demonstrate interim progress
- A validated baseline (cost, scope, schedule)
- Performance measures
- A designated DOE Project Manager

5.2.2 Waste and Material Disposition Maps

Waste and material disposition maps are graphical representations of each DOE site's conceptual approach to managing wastes, nuclear materials, and contaminated media from current status through storage, treatment, and disposal on- and off- site. These maps will provide stakeholders, regulators, and Tribal Nations a clear understanding of waste and materials disposition paths and enable more meaningful stakeholder participation in national planning efforts.

5.2.3 Critical Closure Paths

Site *Paths to Closure* describe “critical closure paths” for the major activities required for site closure. The critical closure path is a streamlined schedule of high-level activities, events, and/or decisions that warrant DOE management attention and must occur “on schedule” to achieve the planned site closure date. These paths identify the set of activities that govern overall completion of EM scope at a site, including critical milestones and interdependent projects.

5.2.4 Programmatic Risk Assessments

To provide a means to elevate key issues and focus management attention, sites have identified those activities and events (key interim milestones) that must occur

if the EM program is to remain on schedule and correspondingly within cost. For each such activity or event, sites have assigned a programmatic “risk” score in each of three areas: technology (do we have the technology to do our work?), scope (do we know how much work there is to do?), and intersite (do we know how and where we plan to store, treat, and dispose of material and waste?). These risk estimates will help EM prioritize funding among critical projects across the complex and identify areas requiring increased management attention and planning effort. Appendix D contains more information about programmatic risk.

5.3 Performance Measurement

EM has developed a single set of corporate performance metrics that focus the organization on achieving EM’s *Paths to Closure* end states and program outcomes, as well as on those crosscutting areas essential to accomplishing program results effectively and efficiently (i.e., financial, safety and health, risk reduction, and stakeholder trust and confidence measures). Tracking these metrics will help EM assess the outcomes of key activities as compared to planned goals, determine progress towards achieving the projects’ and sites’ end states, and improve program performance at all organizational levels. In addition, measuring and tracking performance provides Congress and OMB with data to perform their oversight responsibilities.

Performance metrics provide the link between the processes of planning, budgeting, executing, and evaluating. As such, performance measurement is a key component of all aspects of IPABS:

- **Planning.** As an integral part of the *planning* process, each site establishes performance goals against EM’s corporate measures as applicable to their work scope. Planning information will inform the budget process.
- **Budget Formulation.** During the *budget formulation* process, performance information will be used to justify and defend EM’s budget to OMB, Congress, stakeholders, regulators, and Tribal Nations. Performance goals that were established during the planning phase may be adjusted to reflect the results of congressional actions and field office baseline changes, as necessary.

EM Performance Metrics

EM’s performance metrics data will be collected at a number of levels and will reflect key objectives of EM activities and crosscutting issues:

- Waste stored/treated/disposed
- Release sites completed
- Facilities deactivated/decommissioned
- Material stabilized/made disposition-ready
- Technology deployment
- Risk reduction
- Safety and health
- Land released to public
- Pollution prevention
- Stakeholder trust and confidence

- **Budget Execution.** Site project managers and contractors will *execute* their work scope in accordance with the approved work plans.
- **Program Evaluation.** Program results will subsequently be *evaluated* against the pre-established site and project performance measures goals and will be reported as part of the Assistant Secretary's Quarterly Management Reviews.

5.4 Budget Formulation

Each year, EM formulates a budget to satisfy Department of Energy (DOE), Office of Management and Budget, and congressional mandates. While *Paths to Closure* is not a budget document, it is intended to inform budget formulation by establishing a strategic plan. Consistent with the 2006 vision, the budget is formulated by assigning projects to the following three program accounts:

- **Closure** includes all projects at sites closed by 2006 without a continuing DOE mission.
- **Project Completion** includes sites completed by 2006 with an ongoing DOE mission, and projects completed by 2006 at sites with cleanup work continuing after 2006.
- **Post-2006 Completion** includes projects that are expected to require work beyond FY 2006.

The new structure identifies three additional accounts: Technology Development, Program Direction (i.e., federal salaries), and Privatization projects. These six accounts are designed to allow Field managers more flexibility in using their funding more effectively to meet programmatic goals.

In keeping with the IPABS commitment to integrating planning, budgeting, and management functions, each project is assigned to one of these new budget accounts. As such, the budget process will be directly related to the cost estimates and performance metrics maintained in the Project Baseline Summaries. This will enable EM to develop more effective budgeting strategies that respond to progress in the Field and allocate appropriate funding to meet goals as expressed in critical closure path models and programmatic risk assessments.

5.5 Management Initiatives

IPABS not only integrates and streamlines EM's planning and budgeting process, but also improves the execution and management of EM activities. Three new management initiatives comprise the IPABS management reform efforts: 1) clarifying the Field and Headquarters management responsibilities, 2) elevating personal accountability through management commitments between Headquarters and Field Managers, and 3) instilling new incentives for enhanced performance and project acceleration through contract reform.

5.5.1 Clarifying Management Responsibilities

The 2006 vision and IPABS shifts the focus on management and execution of projects to the Field where the work toward closure is accomplished. The overall strategy for managing the Closure projects is for the Field to manage the planning, programming, and execution of its projects. Headquarters will work with the sites in preparing cleanup plans and, in partnership with the site, will assist in achieving cleanup objectives.

EM Headquarters has many roles for providing assistance to the Field. In its role of site advocacy, Headquarters personnel are responsible for working within the Department, the Office of Management and Budget, and the Congress to obtain appropriate budget levels. Headquarters develops and implements cross-complex solutions for material consolidation and waste treatment, storage, and disposal. Headquarters also establishes necessary policies for the effective execution of cleanups. EM Headquarters staff serve as facilitators across Department Headquarters Offices and other agencies to assist the sites with meeting their performance commitments. Finally, Headquarters coordinates with stakeholders at a national level.

The Operations/Field Offices are responsible for awarding contracts, overseeing contractors, and the assurance of the health and safety of workers. Other responsibilities include developing project structure and definition; establishing project baselines; conducting performance assessments; and working with elected officials, Federal/State/local regulators, Tribal Nations, other governmental agencies, stakeholders, and the public to implement the EM cleanup program at their sites.

5.5.2 Establishing Management Commitments

To establish more personal accountability for cleanup progress, the Assistant Secretary for EM and each Site Manager sign agreements for the execution year that commit each site to accomplishing a certain scope of work. These commitments are discrete examples of the focus on field-level responsibility and accountability for cleanup accomplishments. EM tailors these commitments to individual Operations/Field Offices and will provide a balanced approach to determining critical program expectations and for assessing EM's progress towards meeting key programmatic and high visibility project goals and objectives.

5.5.3 Improving Contract Management

The *Paths to Closure* management system includes a range of improvements in the writing and execution of contracts. These improvements will ensure that EM contracting practices are consistent with the cost-effective achievement of *Paths to Closure* goals. IPABS envisions four specific contracting improvements:

- Increased use of contractor incentives for improved performance (e.g., quality results, accelerated completion) and disincentives for poor performance;
- Additional privatization of certain EM cleanup activities by encouraging free market principles through a more open, competitive bidding process;
- Increased use of performance-based contracting mechanisms (for example, competitively awarded fixed price contracts) to encourage more efficient cleanup; and
- Additional focus on linking work planning and the way contract types are selected, the incentives, and the make or buy process.

To ensure that all EM sites work towards implementing these strategies, EM has undertaken a review of current contracting practices, focusing on integration of related activities and the periodic sharing of lessons learned to determine the most favorable contract vehicles for accomplishing EM work. In addition, EM requested sites to report on the quantitative and qualitative improvements in their implementation of performance-based management contracts and the increases in dollar value or numbers of competitively awarded fixed price contracts, including privatization contracts.

These improvements are underway at sites planning on accelerated site work scope completion. Sites currently funded out of the Closure Account have adopted new contracting principles that provide incentives for accelerating cleanup and disincentives for falling behind schedule. This dual approach is crucial to the overall goal of making accelerated completion a reality. Eventually, each of the Closure Account sites will reach a stage when the site managers can fully quantify required closure activities and award a competitive, performance-based contract, much like the recent contract at the Miamisburg Environmental Management Project in Ohio.

5.6 Program Evaluation

Each of the components of IPABS described above enables EM to conduct a thorough evaluation of annual cleanup progress at the end of each fiscal year. Performance metric data can be summarized and compared against management commitments and enhanced performance goals. EM can use programmatic risk and critical closure path data to focus their performance reviews on PBSs critical to the completion of the EM program.