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PAPER

INTEGRATED PLANNING: A BASELINE DEVELOPMENT PERSPECTIVE

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INTEGRATED PLANNING: A BASELINE PERSPECTIVE

Background

The mission of the Fernald Environmental Restoration Management Corporation (FERMCO) is: "Together DOE and FERMCO are committed to the safe, least-cost, earliest, final cleanup of the Fernald site, within applicable DOE orders, regulations and commitments and in a manner which addresses stakeholders concerns." With this working philosophy in mind, many improvements have been made by FERMCO to date at the Fernald site. One of the improvements was the development and maintenance of the approved Fernald Environmental Management Project (FEMP) Baseline for the period of FY 1994 through FY 1999.

The FEMP Baseline establishes the basis for integrating environmental activity technical requirements with their cost and schedule elements. The result is a path forward to successfully achieving the FERMCO mission. Specific to cost management, the FEMP Baseline has been incorporate into the FERMCO Project Control System (PCS) to provide a time-phased budget plan against which contractor performance is measured with an earned value management system. The result is the Performance Measurement Baseline (PMB), an important tool for keeping cost under control.

The purpose of this paper is to share the experience and lessons learned to date on developing and maintaining the PMB. The paper first provides an overview of the development and maintenance process, and then reviews various lessons learned from continuous improvement efforts made by FERMCO.

Process Overview

The process of developing and maintaining the PMB can be divided into the following twelve steps:

1. Define work scope
2. Define project organization
3. Assign accountability
4. Estimate the work
5. Schedule the work
6. Establish Performance Measurement Baseline (PMB)
7. Authorize and execute the work
8. Measure actual performance
9. Collect actual expenditure
10. Analyze progress
11. Take corrective action
12. Control changes

Further information regarding these steps is available in the Poster Session entitled "Integrated Project Execution" at this Conference. The Conference Paper entitled "A Fully Integrated Project Control System That's Implemented and Works" also provides information about this process from a computer system implementation perspective.

The FEMP Baseline documents are organized into four "books." Each book consists of one or more volumes. These four books and their contents are briefly described as follows.

The *"Gray Book"* is a summary to describe the planning approach and to provide an Activity Data Sheet (ADS) level summary of the baseline. Its contents include: Introduction, Baseline Development, Work Breakdown Structure, Responsibility Assignment Matrix, Summary BCWS and Cost Charts, Summary Schedule, and Summary Labor Plans.

The *"Blue Book"* contains the mid level of technical scope, costs and schedules. Its contents include: Description of the ADS, Assumptions, Plot Plan of the Unit, Contaminants of Concern, WBS Structure, WBS Dictionary, Summary of the Unit, Milestone Schedules, Logic Diagram, Estimating Summary / Traceability, Resource / Cost Charts and Reports.

The *"Gold Book"* contains detailed estimating information that was published and issued with the baseline. Specifically, the Gold Book has two parts: Reference Manual and Detailed Estimates.

The Reference Manual listed instructions provided to the prepares of the Baseline. These instructions include: Coding Structure, Control Account / Work Package Numbering Structure, and etc. The Reference Manual also contains the Estimate Backup Manual. The Estimate Backup Manual provides instructions to estimators. These instructions include: Basis of Estimate, Assumptions, Inclusions / Exclusions, Estimate Category Description, Estimate Detail Sheets, Indirect Explanations, Risk Analysis, Material Takeoff Allowance, Productivity Factor, Waste Containers, Craft Wage Rates, FERMCO Resource Skill Rates, Escalation Rates, Estimate Request Form, Concrete Types Chart, and etc.

Detailed Estimates are supporting estimates for Control Accounts / Work Packages in a consistent format. These detailed estimates are traceable to the roll-up estimate summary contained in the "Blue Book."

The *"Addendum 1 Book"* is a compilation of all applicable comments generated by DOE's reviews of the baseline. It also describes the corrective actions agreed to by DOE and FERMCO.

Lessons Learned

This section discusses lessons learned resulting from FERMCO's successful experience to date on developing and maintaining the FEMP Baseline. These lessons learned are divided into three categories: Pre-Planning, Development, and Maintenance. In the following discussion, "contractor" refers to an environment restoration managing/integrating contractor providing services to DOE, and "DOE" refers to all applicable DOE offices (e.g.,. field and EM).

Pre-Planning: Prior to developing the baseline, the contractor should perform the following tasks. These pre-planning tasks will pay a dividend in the final number of hours expended.

- Work closely with DOE to identify:
  - ✓ All guidance applicable to the baseline development
  - ✓ Project concepts and policies. Some examples are: how funds will be controlled, the number of B&R codes, the reduction in force and the re-training of work force.
  - ✓ Acceptable level of detail needed in the WBS Structure / Dictionary, including technical scope, cost estimates, schedule, and assumptions.
  - ✓ Acceptable level of supporting details to be available in backup files.

- ✓ Baseline review criteria.

- Develop and obtain DOE's approval of the following:
  - ✓ Planning, scheduling, and estimating procedures for developing the baseline. These procedures need to clearly identify the work processes, reference data bases (e.g., estimating factors and unit rates), uniform document formats, computer systems to use, coding structures, and etc.
  - ✓ A baseline development execution plan. Due to the complexity involved, the development needs to be treated like a project in itself. The execution plan needs to identify the project manager and members, their roles and responsibility, communication / coordination processes, the organization of baseline documents, and schedule milestones for reviewing / delivering products.

- Compile results from the above pre-planning tasks and provide training to all baseline development team members accordingly.

- Train, train, and train.

Development: During the development phase, the contractor needs to pay attention to the following tasks to ensure the smooth delivery of a quality baseline.

- Obtain top management support to communicate the urgency of the development with all team members and to ensure that the "owner" (e.g., Control Account Manager) is truly involved in developing relevant plans.

- Maintain close interactions with all development team members and DOE. Coordination meetings at different levels need to held on a regular basis. To further improve communication, one approach may be to establish a "war room" to provide a central location for tracking the status of baseline implementation.

- Conduct reviews with internal as well as DOE reviewers throughout the development to ensure that issues will be identified and resolved at the earliest possible time.

Maintenance: Once an approved baseline is in place, the contractor needs to focus on the following tasks to ensure that the baseline will be used correctly and effectively as a management tool.

- Obtain top management support to require the use of PCS reports (e.g., Variance Analysis Reports) in all management functions. That is, the baseline must be the basis for project management.

- Develop PCS applications / tools which will enhance users management capabilities. It is important to get users buy-in because they are the "heart" of a successful baseline implementation.

- Provide reliable and on time information for PCS users.

- Develop procedures to guide the proper applications of various PCS tools and to ensure that change control is strictly followed to maintain the baseline integrity.

- Provide training to all PCS users to gain their ownership of the whole process.

- Train, train, and train.

Together We Can!

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