



U.S. DEPARTMENT OF  
**ENERGY**

# ***Continuous Improvement in Project Management***

***Eric Cochran  
Office of Project Management  
Environmental Management***

***Meeting of the  
Environmental Management Advisory Board  
March 31, 2010***



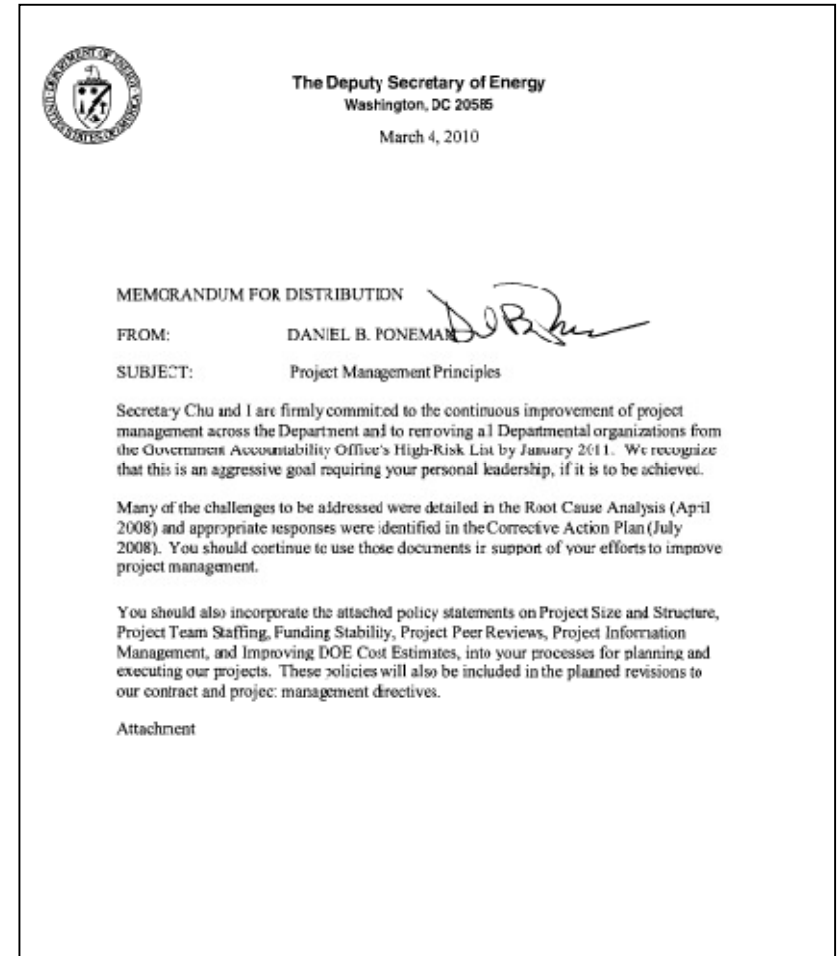
***EM Environmental Management***

***safety ❖ performance ❖ cleanup ❖ closure***

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# DOE Project Management Principles

- March 4, 2010, policy memorandum from Deputy Secretary Poneman issued project management principles for DOE
- DOE senior leadership commitment
  - Continuous improvement of project management
  - Removing all DOE organizations from the Government Accountability Office's High-Risk List by January 2011



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# ***DOE Policy Statement***

## ***Design Maturity***

- Design maturity must be advanced to a sufficient level prior to establishing the performance baseline
- A cost estimate developed that all relevant organizations have a high degree of confidence will endure to project completion
- Factors such as project size, duration, and complexity will be considered

**EM is implementing 70-90% design completion  
prior to project baseline approval**



# ***DOE Policy Statement***

## ***Project Size and Structure***

- Smaller projects are often easier to manage than larger projects and can be completed in less time with reduced risk
- Program Offices to consider breaking larger projects into multiple, smaller, more discrete, and usable projects that collectively meet the mission need
- Benefits of improved management and risk exposure should be balanced with the potential for increased overhead costs
- Each project should stand on its own and will be subject to appropriate DOE directives

**EM is making progress in restructuring the portfolio to create smaller, discrete capital asset projects separated from operations activities**



# *EM Portfolio Restructuring Update*

- Accomplished evaluation of current EM project baselines to determine capital asset project and operational components
  - Initial declaration of fully operational PBSs
- Ensured integrity and traceability to approved lifecycle costs
- Currently defining specific capital asset projects within PBSs
  - Capital Asset projects will be consist with completed Critical Decisions (CD) as required by DOE Order 413.3A
  - Restructuring **will not** include changes to the approved baseline cost, scope, or schedule
- Restructured portfolio is targeted to be implemented by June 2010 for budget execution, project reviews and reporting



# ***DOE Policy Statement***

## ***Project Staffing***

- Sufficient qualified staff (including contractors) must be available to accomplish all contract and project management functions
- Based on a variety of factors, including project size and complexity, taking into account the management experience of the project staff
- Use a validated methodology to determine the appropriate project team size and required skill sets

**EM established a Project Management Partnership with the U.S. Army Corps of Engineers in 2009 to provide resources for Federal management and oversight**



# *Highlights of Project Management Partnership*

- EM established Partnership with USACE in September 2009
- Approach is to acquire "owner's representative" resources to assist in effectively managing and overseeing projects
- "Bottom line" objective is to improve performance of EM construction and capital asset projects
- Since October 2009, 67 FTEs have been deployed at 8 sites and HQ using existing USACE contracts and resources
- EM requested USACE to conduct independent detailed functional analyses of Federal staffing for EM projects to identify five-year needs and gaps
- USACE procurements are in process for firms with sufficient capabilities and capacity to meet EM needs, with the first contract to be awarded in late May 2010



# ***DOE Policy Statement***

## ***Funding Stability***

- Improved project and financial management integration strengthens project stability and reduces risk
- In approving or changing a project life-cycle funding profile, the acquisition executive must determine it is affordable and executable within the budget portfolio
- CFO will verify that the funding profile is covered within the President's budget
- Line item capital asset projects with a total project cost less than \$50M should be fully funded in a single budget request

**With the portfolio restructuring, EM will have added flexibility to ensure construction and capital asset projects are funded at baseline approval**





# ***DOE Policy Statement Project Peer Reviews***

- Cross-functional Project Peer Reviews are considered a "best practice" by the Government Accountability Office with demonstrated benefits
- Focused, in-depth reviews are conducted by non-advocates (Federal and contractor experts) to support the design and development of a project
- Conducted at least once a year for large projects and more frequently for the most complex projects or those experiencing performance challenges

**EM started Construction Project Reviews in 2009 based on the successful Office of Science model with at least one review conducted on each Line-Item project**



# ***DOE Policy Statement***

## ***Project Management Information***

- Project information must be timely, accurate, consistently reported and auditable
- Project Assessment and Reporting System (PARS) II will be the central repository for key project information
- Achieve complex-wide roll-out by the end of Fiscal Year 2010
- Project data to be uploaded into PARS each month, including monthly Earned Value Management System data provided directly from contractors' systems

**EM achieved the capability in 2009 for selected construction projects to collect and analyze the data and blazed the trail for further DOE implementation**



# ***DOE Policy Statement***

## ***Improving DOE Cost Estimates***

- Independent cost estimates (ICE) for major projects prior to approval of Alternative Selection and Performance Baseline (Critical Decisions 1 and 2)
- For start of construction (Critical Decision 3), DOE will conduct an ICE if warranted by risk and performance indicators
- All Programs to support development of a DOE Cost Database with historical and actual costs

**The EM Cost Estimation “Center of Excellence” at the Consolidate Business Center conducted 27 ICEs in 2009 with 93% within 25% of a final contract award amount**



# Project Performance Goals

- **Capital Asset Line Item Projects**
  - Achieve CD-4 with original approved scope and within 10% of original approved cost<sup>1</sup>. On a program portfolio basis, 90% of projects will meet this criteria
- **EM Cleanup Projects<sup>2</sup>**
  - Achieve >80% of original defined NTB end-state scope, with a less than 25% of cost variance from original approved baseline<sup>1</sup>. On a program portfolio basis, 90% of projects will meet this criteria

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1. Unless impacted by a directed/approved change.
  2. With the restructuring of EM portfolio into capital and non-capital operations activities, this goal is no longer applicable. All EM capital asset projects must achieve the same goal as the line item construction projects.



# ***EM is Improving Project Management***

- EM commitment to capital asset project delivery on schedule and within cost
- Portfolio restructuring with more manageable right-sized projects to reduce risks
- Sufficient design completion and funding ensured prior to baseline approval
- Cross-functional Construction Project Reviews to ensure early identification and resolution of issues
- Project Management Partnership and project information tools to assist Federal staff in management and oversight
- Improved independent cost estimates to help ensure success in cost performance

**The EM goal is to earn our way off the GAO High Risk List**



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# *Backup Slides*



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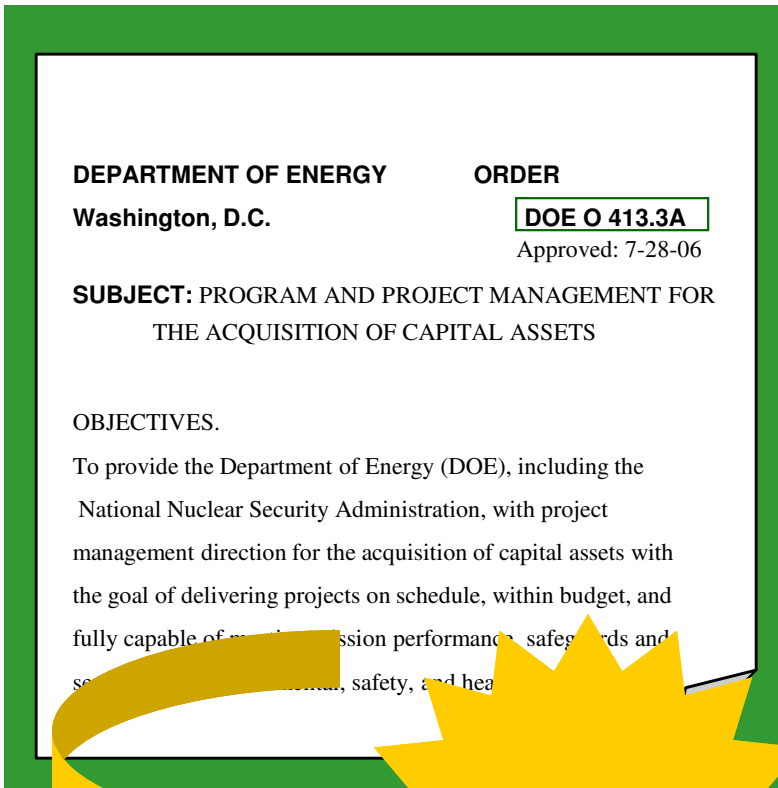
# *Focus Areas to Improve Project Structure*

The current portfolio structure for PBSs

- Are too large to manage and provide adequate oversight
- Include both capital asset and operating activity scope
- Are difficult to separate cost, schedule and budget of subprojects from overall PBS
  - Struggling construction and capital asset projects are overshadowed when overall goals are measured
  - Operating projects and activities progress and accomplishments masked by “no completion” until end of the lifecycle for PBS
- Prolonged durations of current PBSs don’t yield any near-term successes or accomplishments
- PBS structure does not adequately demonstrate EM’s commitment to fund capital asset projects



# Modify Project Categorization Approach



- Align projects better with DOE Order 413.3A
- Provide enhanced ability to tailor project management
- Create more manageable discrete blocks of work while still tracking life-cycle costs
- Break work into consistent categories:
  - Construction projects
  - Cleanup capital assets projects
  - Operational cleanup activities and programs





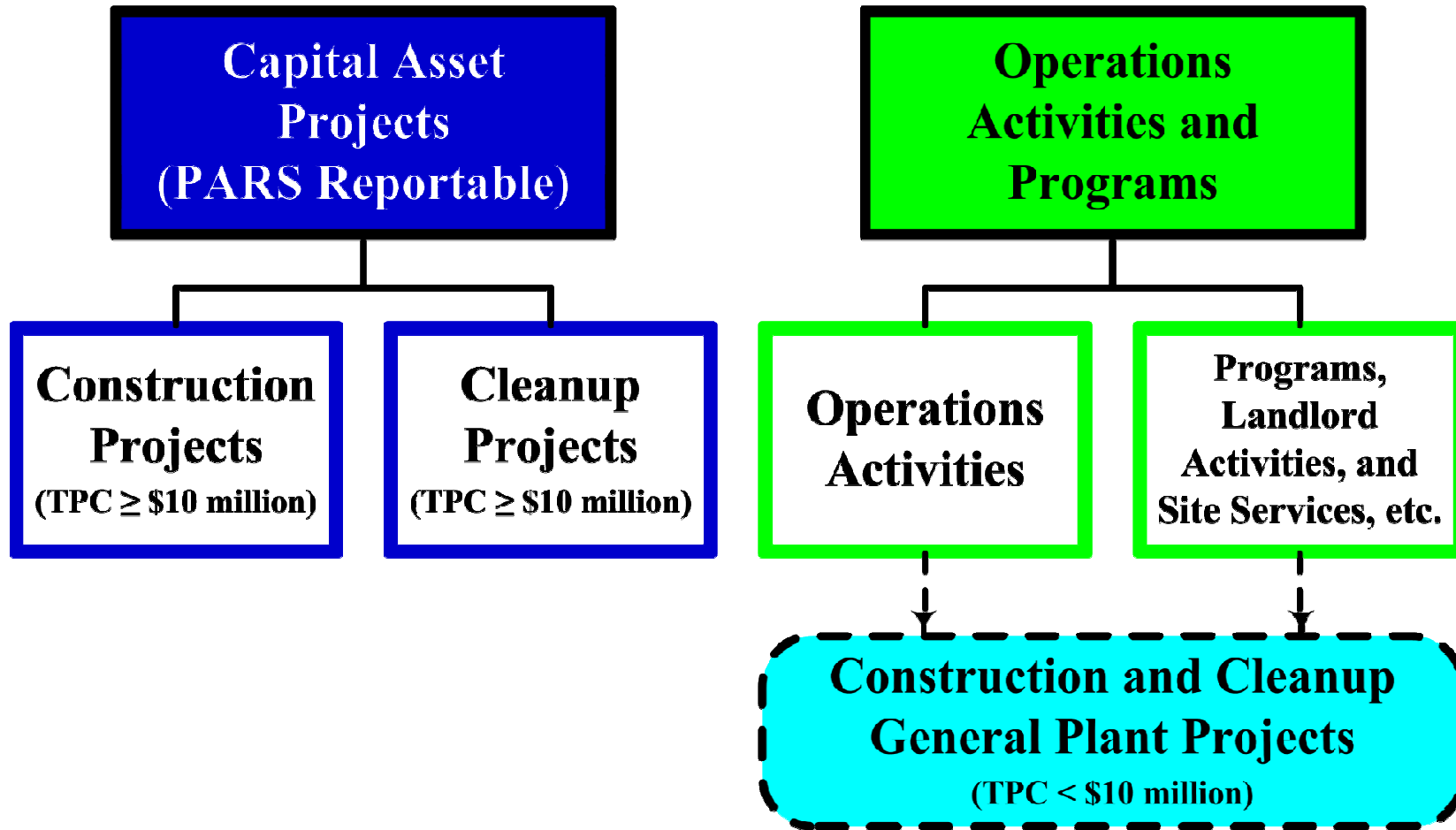
# *Project Categorization Goals*

- Shift to a more performance-based program
  - Establish smaller capital projects within each PBS
  - Baseline with clearer scope definition
  - Develop more defensible project cost estimates
  - Identify schedules with realistic end dates
  - Greater understanding of project risks and opportunities
  - Achieve more successful project completions
- Ensure continued accountability of activities
  - Maintain integrity of lifecycle cost estimates
  - Assign performance measures and milestones to specific subprojects and operating activities

**Categorizing EM work will lead to improved program, project, and contract management by defining performance expectations and improving stakeholder communications.**



# *EM's New Project Structure for PBSs*



# *EM's New Project Structure*

- Restructure PBS to differentiate construction and capital asset projects from operating programs and activities
  - Develop manageable sub-projects using Analytical Building Blocks and Work Breakdown Structure
  - Maintain configuration control of lifecycle scope and cost
- Apply DOE O 413.3A requirements
  - Capital asset projects ( $\geq$  \$10 million)\*
- Apply DOE O 413.3A principles
  - General plant projects ( $<$  \$10 million)\*
  - Operations activities and programs
- Deliver project completions
- Deliver performance metrics as agreed to in contract and annual operating plan

\* FY2010 only, FY2011 general plant project level returns to less than \$5M



# Guidelines for Restructuring Into Capital and Non-Capital

## CAPITAL ASSET PROJECTS

### Construction Projects

- Line item construction projects
- Minor new construction projects\* with total project cost (TPC\*\*) of \$10 million\*\*\* or more.

\* Refer to DOE Order 430.1B, Change 1, *Real Property Asset Management*, for definitions of alterations and betterment.

\*\* DOE Manual 135.1-1A, Change 1, *Department of Energy Budget Execution-Funds Distribution and Control Manual*, specifies total estimated cost (TEC). EM will utilize TPC as the cost determinant.

\*\*\* Congress raised the cost threshold for General Plant Projects (GPP) and Institutional GPP from \$5 million to \$10 million in *Omnibus Appropriations Act of 2009* (H.R. 1105).

### Cleanup Projects with TPC of \$10 million or more

- Surface and subsurface soil remediation such as construction of caps and engineered cover systems; excavation of contaminated soils and waste materials; and *in situ* grouting
- Surface water and groundwater remediation such as construction of treatment units; installation of sampling, monitoring and sentry wells; installation of barrier systems; and construction of phyto-remediation systems
- Retrieval of transuranic or other solid waste from **earthen-covered storage below grade**
- Removal or closure of radioactive liquid waste or high level waste tanks following waste retrieval operations
- Nuclear facility decommissioning
- Non-nuclear facility demolition and removal

## OPERATIONS ACTIVITIES & PROGRAMS

### Operations Activities

- Stabilization, packaging, storage, transportation, and disposition of: (1) solid waste, including transuranic waste; (2) liquid waste, including high level waste and radioactive tank waste; and (3) nuclear materials, including special nuclear materials and spent nuclear fuel
- Retrieval of transuranic or other solid waste from **earthen-covered storage above grade**
- Operation of facilities for receipt and retrieval of high-level waste
- Operation of waste processing facilities
- Surveillances, non-destructive and destructive inspections, and other stewardship activities of nuclear materials
- Emergency removal actions
- Cleanup activities with TPC less than \$10 million
- Site/facility investigation, characterization, sampling and analysis, alternatives evaluation, and other activities leading up to the final approved cleanup decision document
- Operation of environmental remediation systems such as groundwater treatment systems
- Post-construction and post-closure care of remediated land burial sites
- Long-term environmental stewardship including environmental monitoring and institutional controls
- Facility shutdown and deactivation activities in preparation for final decommissioning

### Programs

- General Plant Projects and Institutional General Plant Projects
- Alterations and Betterments
- Maintenance and Repair
- Landlord activities and site services
- Safeguards and security
- Emergency management
- Land management
- Fleet management
- Technology research, development, demonstration and deployment
- Community-support grants
- Public outreach and regulator oversight grants
- Preservation of cultural resources
- Program management

