EM Projects Perspective

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2016 Department of Energy Project Management Workshop
March 22, 2016
Topics for Discussion

- EM Portfolio
- Actions to Address Challenges
- Lessons Learned
- Project Management Success Trend
Uniqueness of EM Projects Portfolio

- EM projects encompass a broad range of complexity
  - Soil and buried waste removal, landfill construction, decontamination and demolition, repository systems, TRU waste packaging, sludge processing facilities, tank waste processing facilities

- EM construction projects for waste processing usually involve unique, first-of-a-kind technologies requiring substantial technology development and risk management

- EM projects are often driven by regulatory requirements and tri-party agreements

- High level of interaction and coordination with States, local governments, regulatory agencies, and communities
FY16 Funding by Appropriation

- Defense Environmental Cleanup: 85%
- Non-Defense Environmental Cleanup: 4%
- Uranium Enrichment Decontamination and Decommissioning Fund: 11%

<table>
<thead>
<tr>
<th>Appropriation</th>
<th>FY16 Funding</th>
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<tbody>
<tr>
<td>Defense Environmental Cleanup</td>
<td>5,289,742</td>
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<tr>
<td>Non-Defense Environmental Cleanup</td>
<td>255,000</td>
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<tr>
<td>Uranium Enrichment D&amp;D Fund</td>
<td>673,749</td>
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<td>Total</td>
<td>6,218,491</td>
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EM Portfolio Overview

- **4 Line Item Construction Projects (post CD-2) – $15.1B combined TPC**
  - Waste Treatment and Immobilization Project (WTP)
  - Salt Waste Processing Facility (SWPF)
  - Saltstone Disposal Unit #6 (SDU-6)
  - K West Basin Sludge Removal Project

- **9 EM Cleanup Projects (post CD-2) – $3.2B combined TPC**
  - River Corridor Closure Project
  - Plutonium Finishing Plant D&D
  - Separations Process Research Unit Nuclear Facility D&D
  - Building G2/H2 D&D
  - K-27 Demolition
  - D-Area Ash Basin
  - Plutonium Finishing Plant Demolition
  - K-31 Facility Demolition
  - Old Town Demolition Project, Phase 1

- **19 Active Pre CD-2 Projects - Cost Range: $10B - $16B**

- **83 Operations Activities - Life Cycle Cost Range $262B-$288B**
  - Solid Waste Processing and Stabilization
  - Deactivation
  - Tank Waste Processing and Operations
  - Spent Fuel Stabilization
  - Safeguards and Security
  - Waste Disposition
  - Soil and Groundwater Remediation

**FY 2016 Total Funding $6.22B**

- **WTP $690M**
- **SWPF $194M**
- **SDU-6 $37M**
- **KW Basin $77M**
- **Operations $4,777M**
- **Other Capital $446M**

**Capital Project Funding $1.44B**
- Post CD-2 Line Item $990M
- Other Capital Projects: $446M
**Actions to Address Challenges: Peer Reviews**

**Background**

- Annual, in-depth reviews for all active projects in EM portfolio
- Expanded to CD-0/CD-1 projects, in addition to post-CD-2 projects as required per DOE O 413.3B
- Follows the Office of Science model
- Consistent with the Deputy Secretary’s direction in April 12, 2011

**Benefits**

- Assist sites with improving their project and contract management processes
- Leverages a variety of sources for utilizing Subject Matter Experts (SME), including DOE field staff, U.S Army Corps of Engineers, Academia and industry
- Brings the experiences of project lessons learned from individual sites

<table>
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<th>EM Project Peer Reviews Completed or Planned</th>
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<tr>
<td>FY10</td>
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*Includes PPRs to be conducted by EM and PM
Goals

- Improved alignment with mutual goals and objectives
- Earlier problem identification
- Joint resolution of issues at the lowest accountable levels
- More effective and candid communication
- Better working relationship and team approach

Timeline

- Finalize Partnering Framework during contract transition
- Conduct routine partnering working sessions
Actions to Address Challenges: Contracting

Example: Oak Ridge – Sludge Processing Facility

Project Situation

• Contractor was experiencing challenges in managing both operations work and sludge project design with significant mission impacts

Establish Requirements

Solicit A/E firms

Select based on competency, qualifications, and experience

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<tr>
<th>Actions Taken</th>
<th>Outcomes</th>
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<tr>
<td>• Utilized Brooks Act</td>
<td>• Provided best qualified firm to prepare complex nuclear design</td>
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<tr>
<td>• Select A/E firms for competency, qualifications and experience rather than price</td>
<td>• Focused each contractor on single mission for success</td>
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<tr>
<td>• Changed acquisition approach</td>
<td>• Achieved fixed-price contracting and alignment of contract incentives</td>
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<tr>
<td>• Initiated a separate A/E Services acquisition for sludge project</td>
<td>• Reduced procurement time</td>
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Contract type matched to scope and degree of risk, FFP where possible

Contractors with skills, experience and depth suited for the job; financial stability; and demonstrated past performance

Contracts with clear requirements and contractors held accountable for delivering results

Objective performance based incentives (non-FFP contracts)

Provisional fee, hard cost caps, or cost share approaches

Contractors’ performance documented in CPARS
Experienced FPDs backed up by sufficient staff

Project baseline fits within funding profile

Improved upfront project planning and requirements definition

Smaller, shorter-duration projects where possible

90% design completion and proven technology before start of construction

Thorough risk analysis updated through life-cycle

Close working relationship between FPD and CO
### EM Capital Project Management Success Trend

**Project Success\(^1\) by Year Baselined\(^2\)**

- EM projects baselined after 2008 have been more successful

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<tbody>
<tr>
<td>Success of completed projects</td>
<td>50% 1 of 2</td>
<td>33% 2 of 6</td>
<td>60% 9 of 15</td>
<td>90% 9 of 10</td>
<td>92% 24 of 26</td>
<td>100% 4 of 4</td>
<td>100% 1 of 1</td>
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<tr>
<td>Forecast for active projects</td>
<td>0% 0 of 1</td>
<td>0% 0 of 1</td>
<td>0% 0 of 2</td>
<td>--</td>
<td>50% 1 of 2</td>
<td>--</td>
<td>--</td>
<td>100% 1 of 1</td>
<td>100% 1 of 1</td>
<td>100% 3 of 3</td>
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<tr>
<td>TOTAL All Projects</td>
<td>33% 1 of 3</td>
<td>29% 2 of 7</td>
<td>53% 9 of 17</td>
<td>90% 9 of 10</td>
<td>89% 25 of 28</td>
<td>100% 4 of 4</td>
<td>100% 1 of 1</td>
<td>100% 1 of 1</td>
<td>100% 1 of 1</td>
<td>100% 3 of 3</td>
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1. DOE success definition is used (project scope completed within 110% of the cost at original CD-2)
2. Project displayed by year originally baselined. 13 Projects “chunked” in FY 2010 are shown in the year of their original baselines.
Projects baselined after FY 2008, were completed $448M (21%) below their approved baseline TPC. Adding the forecast for still active projects, the savings are estimated at $427M (15%)
Recognition for EM Projects

Project Management Institute (PMI) Project of the Year

- **2015 Finalist** - River Corridor Closure Project (Washington Closure Hanford)
- **2013 Finalist**: Savannah River Site Recovery Act Projects (Savannah River Nuclear Solutions)
- **2007 Winner**: Fernald Closure Project (Fluor)
- **2006 Winner**: Rocky Flats Closure Project (Kaiser-Hill)