



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

Overview of DOE O 413.3B and EM Project Management Protocol for Demolition Projects

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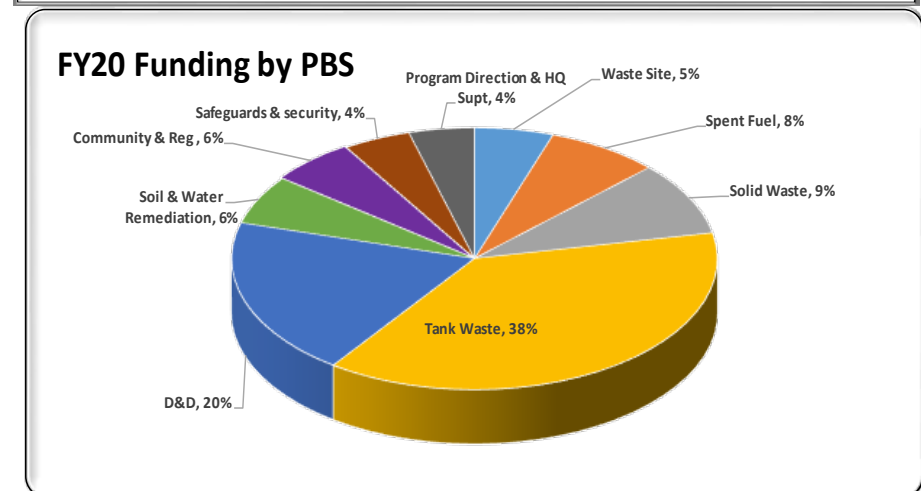
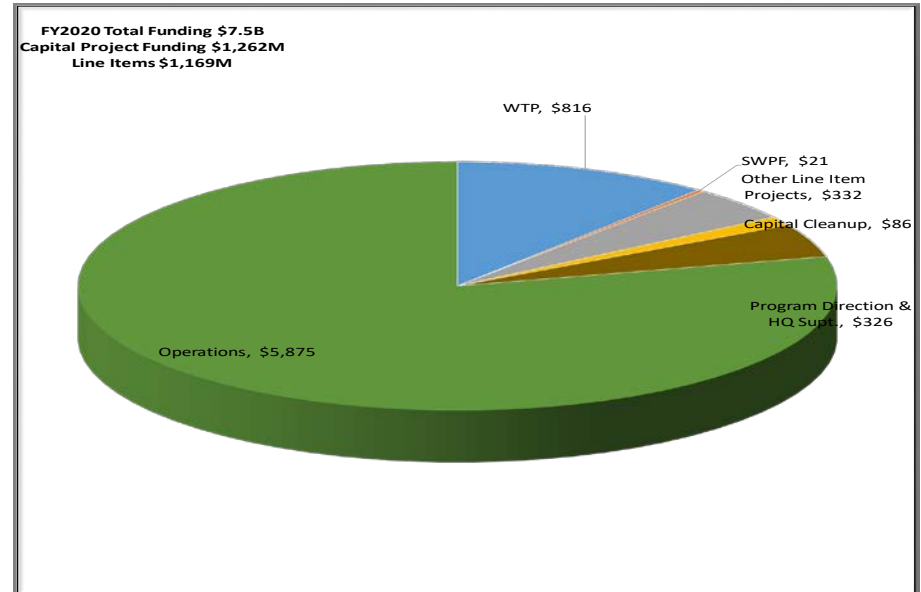
EM Office of Project Management (EM-5.22)

February 24, 2020



EM Portfolio Overview

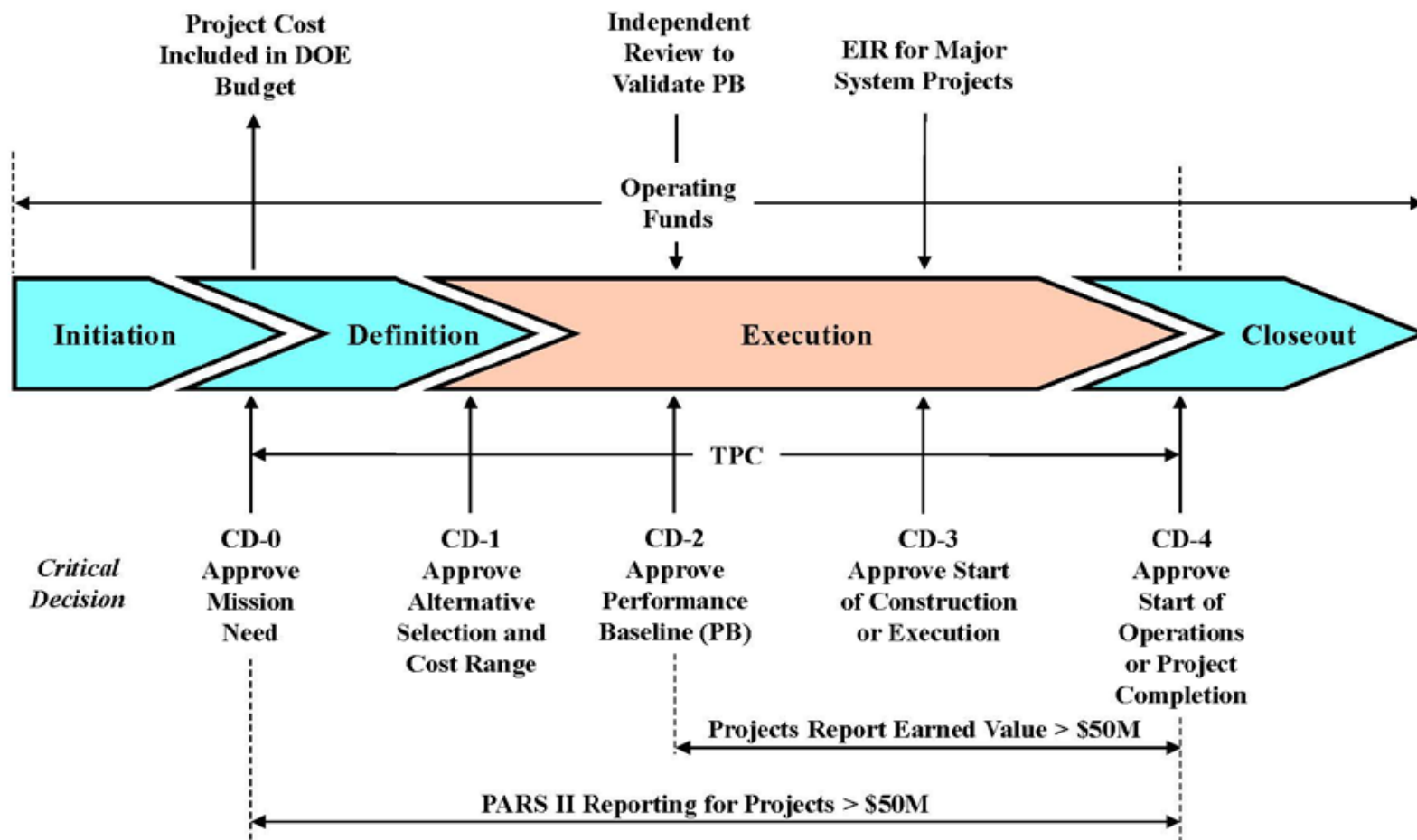
- **Line Item Construction Projects**
 - 14 Projects \$21.6B combined Total Project Cost (TPC)**
 - Follow DOE Order 413.3B
 - Waste Treatment and Immobilization Project (WTP)
 - Salt Waste Processing Facility (SWPF)
 - 12 Others
- **EM Cleanup Projects**
 - 4 Projects – \$717M combined TPC**
 - Proposed EM Project Policy
- **Operations Activities**
 - Life Cycle Cost Range over \$500B**
 - Follow EM Cleanup Policy



What is DOE O 413.3B?

- DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*
- Intended to provide the DOE Elements, including NNSA, with program and project management direction for the acquisition of capital assets with the goal of delivering projects within the original performance baseline (PB), cost and schedule, and fully capable of meeting mission performance unless impacted by a directed change.
- To implement Office of Management and Budget (OMB) circulars:
 - A-11 Preparation, Submission, and Execution of the Budget and its Capital Programming guide
 - A-123 Management's responsibility for Internal control
 - A-131 Value Engineering

DOE's Critical Decision Process



Draft EM Project Management Cleanup Protocol



Key Points- Project Management Protocol

- Creates a standardized, streamlined strategy for EM demolition projects that utilize a regulatory framework to govern cleanup
- Uses same terminology and approach as DOE O 413.3B for simplicity and ease of understanding
- Will be issued as a time limited policy that will be incorporated as an appendix in DOE O413.3B

High-level Process Map Comparison- CD-0/1

BEFORE*

CD-0

Mission Need Statement
Tailoring Strategy
Mission Validation IPR
Technical IPR for Nuclear Projects

CD-1

Preliminary PEP
Risk Management Plan
Analysis of Alternatives
Acquisition Strategy
IPT Charter
Long-Lead Procurement documents
Project Data Sheet
Conceptual Design Report
Technical IPR for Nuclear Projects
Code of Record development
Technology Readiness Assessment
Conceptual Design Report
Conceptual Design Review
Conceptual Design Review Report
Safety Design Strategy
Conceptual Safety Design Report for Haz
Cat 1, 2, 3 nuclear facilities
Conceptual Safety Validation Report
Preliminary Hazard Analysis Report for
nonnuclear project
DOE Review of Preliminary Hazard
Analysis Report
ISM documents
High Performance Sustainable Building
consideration documents
NEPA and permits
Preliminary Security
Vulnerability Assessment
Report
Initial Cyber Security Plan
QA Plan

AFTER

CD 0/1

Memo documenting mission
need and use of applicable
framework

Red = Review
Black = Document

* Based on DOE O 413.3B requirements

High-level Process Map Comparison- CD-2/3

BEFORE*

AFTER

CD-2

Updated PEP
Detailed Resource-Loaded Schedule (Performance Baseline)
Detailed Cost and Schedule Estimates
Updated Risk Management Plan
Contingency Analysis and Plan
EVMS documents
Acquisition Strategy/Plan
Funding Profile documents
Startup Plan
Performance Baseline Validation EIR or Performance Baseline Validation IPR
IGCE
Independent Cost Review for Major Systems Projects
Updated Project Data Sheet
Update and Control Change to Code of Record
Drawings, specifications, and design lists
System Functions and Requirements document (Design Criteria)
Preliminary Design Report
Preliminary Design Review Report
Updated Safety Design Strategy
Preliminary Safety Design Report
Preliminary Safety Validation Report
Hazard Analysis Report (non-nuclear)
DOE Review of Hazard Analysis Report
Preliminary Sustainable Environmental Stewardship-High Performance Sustainable Building provisions
Final NEPA and ROD
Updated Preliminary Security Vulnerability Assessment Report
Updated Initial Cyber Security Plan
Updated QA Plan

CD-3

Updated PEP
Updated Detailed Resource-Loaded Schedule (Performance Baseline)
Updated Detailed Cost Estimate
Updated Risk Management Plan
Updated Value Management and Engineering Report
Updated Acquisition Strategy
Updated Funding Profile documents
Updated Startup Plan
EIR for Construction or Execution Readiness
EIR report on Construction or Execution Readiness
Approved Code of Record
Final Design documents, including drawings and specs
Project Transition to Operations Plan
Initial Checkout, Testing, and Commissioning Plan
Final Design Report
Final Design Review
Updated Safety Design Strategy
Preliminary Documented Safety Analysis
Safety Evaluation Report
Updated Hazard Analysis Report (nonnuclear)
DOE Review of Hazard Analysis Report
ISM Documents
Contractor Management Self-Assessment
Readiness Assessment or Operational Readiness Review
Construction Project Safety and Health Plan
Final Sustainable Environmental Stewardship-High Performance Sustainable Building provisions
Revise Environmental Management System to reflect environmental aspects related to turnover and operations
Updated Preliminary Security Vulnerability Assessment Report
Updated Cyber Security Plan
Updated QA Plan to address testing; identified deficiencies; and startup, transition, and operation activities

CD- 2/3

Project Execution Plan (PEP)
Detailed Resource-Loaded Schedule (Performance Baseline)
Detailed Cost and Schedule Estimates
Risk Management Plan
Contingency Analysis and Plan
EVMS documents
Acquisition Strategy
Funding Profile documents
Performance Baseline Validation IPR (projects > \$100M)
Project Definition Rating Index Analysis (projects > \$100M)
IGCE
Project Data Sheet
Hazard Analysis Report (nonnuclear)
DOE Review of Hazard Analysis Report
ISM Documents
Contractor Management Self-Assessment
Readiness Assessment or Operational Readiness Review
Final NEPA and ROD if not utilizing CERCLA
Security Vulnerability Assessment Report
Updated QA Plan
Site Restoration Plan

Post
CD-2/3

Project Peer Review (projects > \$100M)
Lessons Learned Report on up front project planning and design

Red= Review
White= Document

* Based on DOE O 413.3B requirements

High-level Process Map Comparison- CD-4

BEFORE*

CD-4

Documents to show Key Performance Parameters or Project Completion Criteria met and mission requirements achieved

Project Transition to Operations Plan

Final Project Closeout Report (administrative and financial closeout)

Contractor Evaluation Documents

Lessons Learned Report

Post Implementation Review

Post Implementation Review Report

Operational Documentation

Final Checkout, Testing and Commissioning Plan

Updated Approved Code of Record

Final Design documents for operations

Final Safety Design Strategy

Documented Safety Analysis with Technical Safety Requirements

Safety Evaluation Report

Final Hazard Analysis Report

DOE Review of Hazard Analysis Report

Readiness Review or Operational Readiness Review Report

ISM documents

Updated Construction Project Safety and Health Plan

Final Security Vulnerability Assessment Report

Final Cyber Security Plan for IT projects with Certification and Accreditation

Updated QA Plan

AFTER

CD-4

Documents to show Key Performance Parameters or Project Completion Criteria met and mission requirements achieved (may be satisfied by regulatory approval of project completion)

Perform a verification activity to ensure that all contractual, regulatory and permit requirements have been met, completed, and documented, and that no further RCRA/CERCLA response is needed to protect human health and the environment.

Project Closeout Report (administrative and financial closeout)

Lessons Learned Report regarding project execution

Contractor Evaluation Documents

Final as-built engineering drawings

Updated Documented Safety Analysis (as part of normal periodic review cycle)

Safety Evaluation Report

Red = Review

Black = Document

* Based on DOE O 413.3B requirements

Tracking Project Performance

Overall Project Assessment = EVMS Indicators + Assessment Factors

Project is expected to meet its performance baseline.

Project is at risk of breaching its performance baseline.

=

EVMS Indicators:

- CPI
- SPi
- EACs
- Variances
- Trends
- % Complete

+

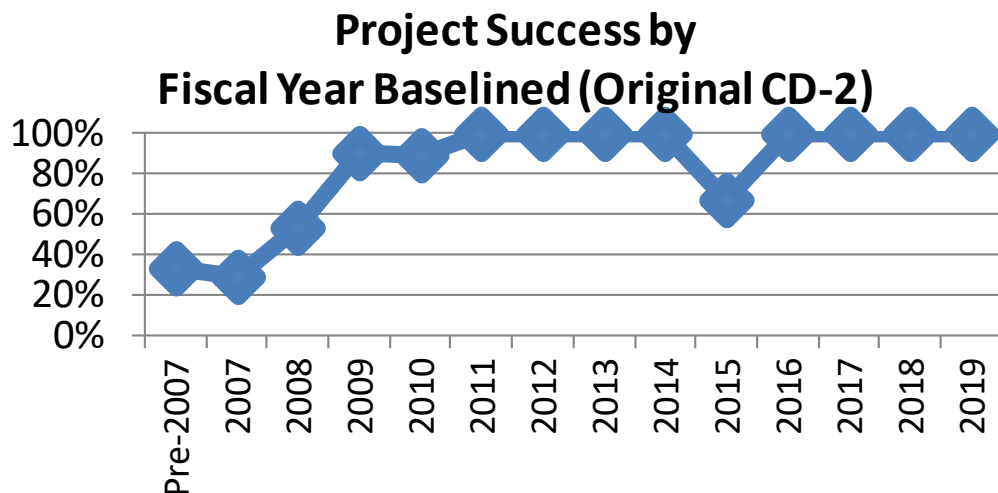
Assessment Factors:

- Data validity
- MR & Contingency
- Reports
- Reviews
- Communication
- Other information

Project is expected to breach its performance baseline.

- Yellow is not bad
- DOE is not fixated on “getting to green,” only achieving project success and meeting our commitments
- Assessment is not solely ratio based
- Trends are important

EM Project Success Trend

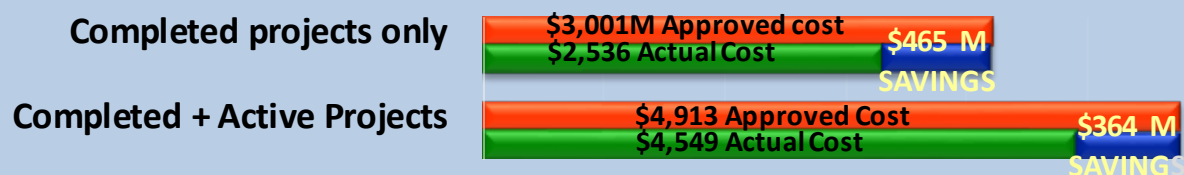


- EM projects baselined since 2008 have been more successful
 - Cumulative portfolio success of 92% (59 of 64) for projects baselined after FY 2008
 - Earlier baselines were only 44% (12 of 27) successful
- Factors contributing to improved results include:
 - Smaller well-defined projects
 - More design maturity at CD-2
 - Use of Peer Reviews
 - Proper funding

Fiscal Year of CD-2	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Success of completed projects	90% 9 of 10	92% 24 of 26	100% 4 of 4	100% 1 of 1	100% 1 of 1	100% 1 of 1	100% 2 of 2	100% 5 of 5	100% 1 of 1	--	
Forecast for active projects	--	50% 1 of 2	--	--		--	0% 0 of 1	--	100% 2 of 2	100% 5 of 5	100% 3 of 3
TOTAL All Projects	90% 9 of 10	89% 25 of 28	100% 4 of 4	100% 1 of 1	100% 1 of 1	100% 1 of 1	67% 2 of 3	100% 5 of 5	100% 3 of 3	100% 5 of 5	100% 3 of 3

Successful EM Baselines Result in Savings

EM Cost Savings (\$M) for projects baselined after fiscal year 2008



Projects baselined after FY 2008 were completed \$465M (16%) below their approved baseline TPC. Adding the forecast for still active projects, the savings are estimated at \$364M (7%).

Questions?

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