

# November 2016

EM-5.22  
Lessons Learned  
Bulletin

## Earned Value Management System (EVMS) Certification and Surveillance Reviews Analyses Results Update



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### Statement:

As part of DOE's effort to institutionalize Earned Value Management System (EVMS) across the Department and export best business practices across programs, EM and PMOA have continued conducting EVMS certification and surveillance reviews. In order to provide EM a conclusive EVM reference database capturing all EVM issues identified from past reviews in one location for analysis, interpretation, and reporting, EM has developed an Earned Value Management Analysis Tool (EVMAT).

This tool provides DOE with information on common recurring EVMS issues as well as areas for improvement. The tool can also assist field offices and contractors to identify common root causes. Additionally, the tool provides EM HQ EVMS review teams with the analytical bases for determination of trends and corrective actions.

Over 280 EVMS Corrective Action Requests (CARs) from a total of eleven (11) certification and surveillance reviews conducted to date, have been input into this Earned Value Management Analysis database. These eleven (11) reviews were conducted at eight (8) EM sites, which include Savannah River, Office of River Protection, Richland, West Valley, Oak Ridge, Idaho, Los Alamo, and Portsmouth and Paducah.

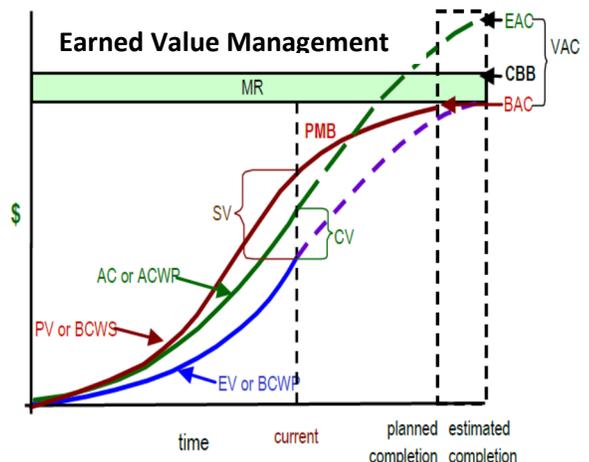
### Discussion:

Earned Value Management has been mandated by the US Federal government's Office of Management and Budget (OMB) as a critical element of Capital Planning and Investment Control. OMB Circular A-11 states: "Earned Value Management (EVM) and risk management are management tools used successfully in both the public and private sectors to mitigate risks in developing capital assets. Agencies must develop a level of expertise with both tools that is appropriate to the size and nature of their capital asset portfolio." As a result, many Federal agencies are working hard to implement effective EVM processes and tools as part of their standard project management practice.

The Federal Acquisition Regulation (FAR) has been revised to expand the number and types of programs that will require EVM. A whole new generation of federal agencies and their contractors are adopting EVM in record numbers. Earned Value Management is increasingly being regarded as a project management "best practice" and is being adopted by many commercial companies and government agencies that want to improve project planning, visibility and control.

DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets, requires for projects greater than or equal to \$20M that the contractor employ an ANSI/EIA-748 compliant EVMS by Critical Decision (CD)-2. Contractor's EVMS needs to comply with DOE O 413.3B, ANSI/EIA-748, and contractual requirements. The contractor's EVMS should be certified as soon as possible, but no later than CD-3. In most cases, EVMS certification will be a condition for CD-3 approval.

EVMS is a proven effective tool to integrate cost, schedule and technical requirements. Making the best use of this tool for managing and controlling its work scope is always the goal of EM



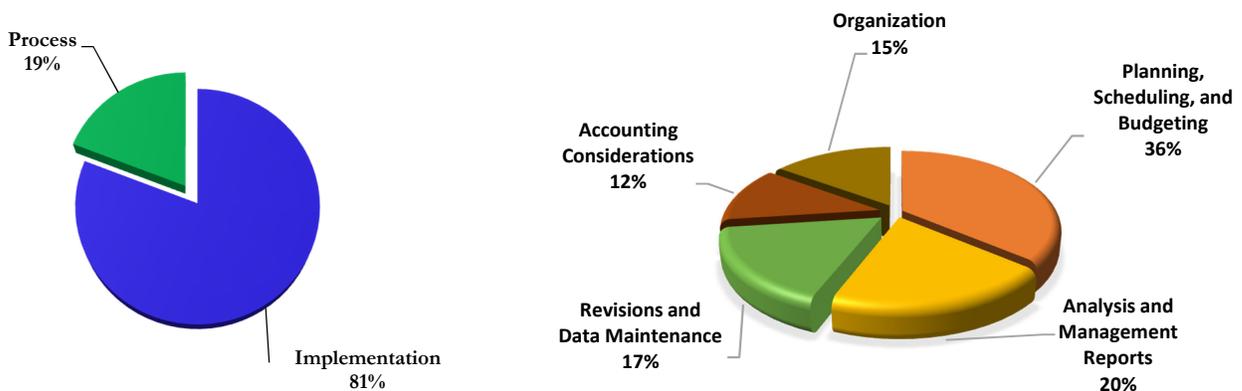
management. This value added approach helps achieve greater visibility and control of the project activities which helps in responding to issues early on, thus making it possible to meet the project timelines. With this effective tool, solid upfront planning, and effective implementation of the EVMS, EM Federal Project Directors can be better informed to make management decisions during the entire life cycle of their projects.

**Analyses Results:**

Eleven EVMS review reports conducted by PM and EM Office of Project Management were collected, and data was analyzed. As a result of analysis, common findings were developed and trends were developed. The trends of non-compliances identified in those reviews are as follows:

- Two types of EVMS non-compliances are documented in CARs. The first is a process non-compliance, i.e., the contractor’s EVM System Description and/or supporting procedures (the ‘written word’) do not comply with one of the 32 EIA-748 Guidelines. The second type of CAR is issued for implementation non-compliance, i.e., the contractor’s EVM System Description and/or implementing procedures are not being followed in practice.
- EM’s analysis of the EVMS reviews conducted to date using the EVMAT, revealed that 81% of CARs issued were implementation non-compliance, and 19% of CARs were process non-compliance.

The analysis also indicated that among the five process areas, Planning, Scheduling, and Budgeting is the area which has the most CARs issued. 36% of CARs were written in this process area.



Based on the CARs collected from the eleven (11) EVMS reviews, it was noted that a large amount of non-compliance CARs were written on Change Controls, System Description & Processes, Integrated Master Schedule Health, Accounting, Variance Analysis Reports. The followings are some of the non-compliance issues on these top five categories:

**Typical issues on Change Control are:**

- Changes incorporated into the baseline prior to approval
- Baseline change controls log not maintained in a manner to allow traceability throughout the EVM system
- WBS dictionary and other project documents are not updates as a result of baseline changes
- Retroactive changes performed to mask variances
- Changes to Performance Measurement Baseline and Contract Budget Base not input in a timely manner

**Some of the issues on System Description and Processes are:**

- Inadequate description of how to integrate work authorization, scheduling, budgeting, accounting, analysis and revisions
- BCP procedure does not address how to handle removed/deferred scope
- Lack of clarity on planning package conversion, Authorized Unpriced Work, and EVMS flow down to subcontractor requirement

- Improperly address DOE contingency, Management Reserve (MR) tracking, and appropriate use of MR

**Typical issues on Integrated Master Schedule (IMS) Health are:**

- IMS does not have a meaningful critical path
- No vertical traceability from field execution schedule to project IMS
- IMS has high floats activities, excessive constraints, inappropriate logic, out of sequence activities, and large duration activities
- Incorrect use of Earned Value Techniques (EVTs), missing EVT within the IMS/schedule

**Typical issues on Accounting are:**

- Accounting and PC EVM cost processor data indicates significant disconnects
- Lack of robust timecard correction policy
- Lack of policy on addressing indirect budgeting

**Typical issues on Variance Analysis Reports are:**

- Lack of necessary detail to address root cause or impact of the variances
- CARs are not reviewed by management on a monthly basis
- Corrective actions identified in VARs were not captured or annotated adequately in the corrective action log

**Recommended Actions:**

The following are recommendations on improving EM EVM practice across the DOE complex:

- EM site offices, Federal Project Directors, and contractors should consider available resources such as PMOA’s EVM Training Snippets and Earned Value Management Interpretation Handbook to supplement for understanding of earned value and demystify the expectations in EVMS certification and surveillance reviews.
- EM site offices and contractors should share EVM best practice and lessons learned through EFCOG annual meeting and/or at EM Annual Project Management and Contract Management workshop.
- EM HQ EVMS team can assist site offices to build strong and qualified EVMS experts team at each site.

Critical Decision(s): CD-2, CD-3, and CD-4

Facility Type(s): All

Work Functions(s): Project/Program Management

Technical Discipline(s): All

**References:**

1. U.S. Department of Energy, *PROGRAM AND PROJECT MANAGEMENT FOR THE ACQUISITION OF CAPITAL ASSETS*, DOE Order 413.3B, accessed October 22, 2015
2. U.S. Department of Energy, *EARNED VALUE MANAGEMENT SYSTEM (EVMS)*, DOE Guide 413.3-10A, accessed October 22, 2015
3. National Defense Industrial Association, *Earned Value Management Systems ANSI/EIA-748-C Intent Guide*, (April 29, 2014)
4. Executive Office of the President Office of Management and Budget, *Preparation, Submission, and Execution of the Budget*, OMB Circular No. A-11, (July 2016)
5. Federal Acquisition Regulation, *Federal Acquisition Circular 2005-91*, (09-30-2016)