PROJECT MANAGEMENT CAREER DEVELOPMENT PROGRAM

Pathways to Project Success

AUGUST 2011

Earned Value...A Program Manager's Crystal Ball

By Karen Urschel, EVP

Earned Value (EV) is a highly regarded project management tool that objectively measures forward progress. An Earned Value Management System (EVMS) allows decision makers to integrate performance, cost, and schedule with risk management by establishing a baseline. The performance measurement baseline considers the budget spread over time to accomplish the scope of work against which progress can be measured. Project managers (PMs) can perform an objective assessment, quantify current project performance, and predict future performance based on trends. EV data provides an early warning of performance problems and the impact of realized risks to allow time for corrective action. So, in essence, it is a PM's crystal ball.

As with any forward looking system, non-believers doubt the ability of EVMS to see into the future. The non-believers may very well be right if the most critical elements of an EVMS are not done properly. The value lies in the *implementation and maintenance* of the EVMS. In fact, think of implementation and maintenance of the system as "polishing" the crystal ball.

So why is it so difficult to keep the crystal ball polished? Common mistakes in implementation and maintenance include:

- **Tasks are too large.** The project needs to be broken down into tasks that are small enough that both cost and duration can be reliably estimated. Output must be measurable and of short enough duration to provide timely visibility of performance issues.
- **Tasks are ill-defined.** Before a baseline can be established, there must be a clear understanding of the tasks required to fulfill the statement of work. When tasks are ill-defined, the baseline will not reflect an accurate roadmap to completion of the project, and will lose its effectiveness in projecting performance.
- **Too much level of effort (LOE) rather than defined products.** Measuring performance against a baseline estimate in terms of both cost and schedule is best done when tasks can be defined to an end product, discretely estimated, and then measured. It is tempting to categorize tasks as LOE because it is easier than taking the time to define them.

(Continued on p.2)

INSIDE THIS ISSUE

(Continued from p.1)

Schedule performance for LOE is simply earned by the passage of time, clouding the ability of the crystal ball to clearly show the path forward. LOE must be restricted to work scope of a general or supportive nature for which measurement of performance is impossible or impractical.

- **Too many baseline changes.** When variances occur, there is a tendency to tweak the baseline to artificially improve performance indices and mask actual variances. While some amount of adjusting of future work may be necessary as risks are realized, the execution is not expected to perfectly match the baseline plan. The intent is for the PM to see where the variances exist, and implement a corrective action plan to get back on course with the baseline, rather than make the baseline fit the performance. Certainly, if variances in planned versus actual tasks are significantly divergent and the baseline no longer represents the path forward, mechanisms are in place to change the baseline plan. But those changes should be kept to a minimum so as not to distort the value of measuring against the original plan.
- **Managers either don't believe or ignore the results.** EV shows where the project really is at any given point and whether the PM can be relatively assured that the project is (or isn't) on track. EV focuses management attention at an early stage when something is going wrong and timely corrections can be made. The value added by EV is that it compares everything (work completed, money spent, and time elapsed) to predict where the project is headed, review EV data, and take immediate action when problems are discovered. Timely positive action leads to project success. PMs should rigorously implement corrective actions early to stay on course.

Question of the Month

By Victoria C. Barth, MA ISD, OECM

Question: How far in advance should Programs submit certification packages to ensure they are eligible for action at the next CRB meeting?

Answer: To allow adequate time for review, the PMCDP requests Level I and II packages be forwarded to the PMCDP five weeks prior to the next CRB meeting; Level III and IV packages should be forwarded six weeks prior. For additional information on PMCDP's requirements for timely submission of certification packages, please see CRB policy flash 2009-04 located on the PMCDP website:

http://energy.gov/sites/prod/files/maprod/documents/Flash_09-04_Submission_requirements.pdf

Technology Readiness Level Calculator

By: Ruben Sanchez, PE, PMP, CCE, CFM, LEED–AP

What is the Technology Readiness Level (TRL) Calculator? For those who have read DOE G 413.3-4, *Technology Readiness Assessment Guide*, or have been involved in Technology Readiness Assessment (TRA) Reviews, it is a tool for assiging a TRL to a technology development program that will support the deployment of Critical Technology Elements (CTEs) within a project. The TRL measures on a scale of one to nine the level of maturity of a given technology. The higher the level of maturity, or TRL number, the lower the risks for that particular element not meeting its functional requirements to support a project.

DOE O 413.3B directs that major system projects (those greater than $750M) where new critical technologies are being deployed have a TRA conducted and an associated Technology Maturation Plan developed prior to Critical Decision 2 (CD-2). On those projects where a significant CTE modification occurs subsequent to CD-2, another TRA must be conducted prior to CD-3. The objective is to enhance project design maturity and reduce technical and cost risks prior to establishing the Performance Baseline.

The TRL calculator in DOE G 413.3-4 provides a snap-shot of a technology's maturity at any given time. It also provides a historical view of technology development when applied at the various stages of project development. DOE G 413.3-4 recommends TRA reviews be conducted by the programs for projects with CTEs prior to CD-2 during the front-end planning process. Using the TRL calculator with supporting tables determines what stage of technology development has been accomplished and what remains to be accomplished to reach full maturity level. The gap between the maturity of the technology and the product's requirements represents the risks of the technology. DOE Programs are afforded the flexibility to modify the tables as appropriate to fit their program needs and unique technologies.

DOE G 413.3-4 promotes achievement of TRL 7 for CTEs within a project prior to CD-3 as a recognized best practice, but in no instance is it recommended that CD-2 be approved with less than a TRL 6. In either case, the residual risks should be accounted for in the Risk Management Plan, recorded in the risk register and assigned the proper contingency in the project baseline.

REMINDER !

The 2012 DOE Project Management Workshop.

It will be held on Tuesday and Wednesday, April 3 & 4, 2012, at the Hilton Alexandria Mark Center, 5000 Seminary Road, Alexandria, VA 22311.

PMCDP Course Schedule

Start	End	Course	CEUs	Location	PMCDP Info	CHRIS Code/ Session	Registration Restrictions
August 2011							
8/1/11	8/3/11	Performance-Based Management Contracting	21*	Las Vegas, NV (Nevada Site Office)	Level 1 Core Course	001030/0051	Per Betty Warrior
8/2/11	8/4/11	Environmental Laws & Regulations	21	Cincinnati, OH (EMCBC)	Level 2 Elective	001046/0028	None
8/2/11	8/4/11	Earned Value Management Systems	21*	Washington, DC (Headquarters)	Level 1 Core Course	001026/0069	None
8/2/11	8/4/11	Earned Value Management Systems	21*	Washington, DC (Headquarters)	Level 1 Core Course	001026/0077	None
8/1/11	8/3/11	Contract Administration for Technical Representatives	21*	Amarillo, TX (Pantex)	Level 1 Core Course	000058	Per Betty Warrior
8/8/11	8/12/11	Program Management & Portfolio Analysis	35*	Morgantown, WV (NETL)	Level 3 Core Course	001025/0020	None
8/8/11	8/9/11	Effective Program and Project Communication	14*	Germantown, MD (Headquarters)	Level 2 Core Course	001940	Future Leaders Program[5]
8/11/11	8/12/11	Effective Program and Project Communication	14*	Germantown, MD (Headquarters)	Level 2 Core Course	001940	Future Leaders Program[5]
8/11/11	8/15/11	Earned Value Management Systems	21*	Germantown, MD (Headquarters)	Level 1 Core Course	001026	Future Leaders Program[5]
8/15/11	8/19/11	Acquisition Management for Technical Personnel	32*	Germantown, MD (Headquarters)	Level 1 Core Course	000145	Future Leaders Program[5]
8/16/11	8/18/11	Performance-Based Management Contracting	21*	Washington, DC (Headquarters)	Level 1 Core Course	001951	EERE[6]
8/16/11	8/19/11	Project Risk Analysis & Management	25*	Germantown, MD (Headquarters)	Level 1 Core Course	001033	Future Leaders Program[5]
8/16/11	8/19/11	Project Risk Analysis & Management	25*	Albuquerque, NM (Alb. Operations Center)	Level 1 Core Course	001033/0035	None
8/16/11	8/19/11	Planning for Safety in Project Management	25*	Oak Ridge, TN (OR Federal Building)	Level 1 Core Course	001035/0046	None
8/22/11	10/14/11	Project Management Essentials	70*	Albuquerque, NM (Alb. Operations Center)	Level 1 Core Course	001022/0047	None
Onsite: 9/20-9/22							
8/22/11	8/26/11	Cost & Schedule Estimation	35*	Las Vegas, NV (Nevada Site Office)	Level 2 Core Course	001044/0012	None
8/22/11	8/26/11	Acquisition Management for Technical Personnel	32*	Aiken, SC (Savannah River)	Level 1 Core Course	000145/0032	None
8/23/11	8/25/11	Earned Value Management Systems	21*	Los Alamos, NM (Canyon School)	Level 1 Core Course	001026/0074	Per Betty Warrior
8/23/11	8/26/11	Advanced Risk Management	25*	Cincinnati, OH (EMCBC)	Level 3 Core Course	001042/0013	None
8/30/11	8/31/11	Effective Program and Project Communication	14*	Morgantown, WV (NETL)	Level 2 Core Course	001940/0003	None
8/30/11	9/1/11	Performance-Based Management Contracting	21*	Amarillo, TX (Pantex Site Office)	Level 1 Core Course	001951	Per Betty Warrior
8/30/2011	9/1/2011	Strategic Planning	21	Albuquerque, NM (Alb. Operations Center)	Level 4 Elective	001043/0008	None

PMCDP Course Schedule

Start	End	Course	CEUs	Location	PMCDP Info	CHRIS Code/ Session	Registration Restrictions
September 2011							
9/12/11	9/14/11	Contract Administration for Technical Representatives	21*	Las Vegas, NV (Nevada Site Office)	Level 1 Core Course	000058/0173	Per Betty Warrior[3]
9/12/11	9/16/11	Cost & Schedule Estimation	35*	Idaho Falls, ID (Idaho Operations)	Level 2 Core Course	001044/0011	Idaho Sponsored[2]
9/13/11	9/15/11	Negotiation Strategies & Techniques	21	Pittsburgh, PA (NETL)	Level 3 Elective	001047/0007	None
9/20/11	9/22/11	Environmental Laws & Regulations	21	Livermore, CA (Lawrence Livermore National Laboratory)	Level 2 Elective	001046/0022	None
9/27/11	9/29/11	Project Leadership & Supervision	22.5*	Livermore, CA (Lawrence Livermore National Laboratory)	Level 2 Core Course	001045/0023	None
9/27/11	9/30/11	Planning for Safety in Project Management	25*	Albuquerque, NM (Alb. Operations Center)	Level 1 Core Course	001035/0003	None
9/27/11	11/8/11	Advanced Concepts in Project Management	50*	Washington, DC (Headquarters)	Level 2 Core Course	001023/0032	None
Onsite: 11/1-11/3							
October 2011							
10/4/11	10/6/11	Executive Communications	21	Richland, WA (HAMMER)	Level 4 Core Course	001031/0025	None
10/11/11	12/16/11	Project Management Essentials	70*	Aiken, SC (Savannah River)	Level 1 Core Course	001022/0049	None
Onsite:11/15-11/17							
10/18/11	10/20/11	Earned Value Management Systems	21*	Morgantown, WV (NETL)	Level 1 Core Course	001026/0076	None
10/24/11	10/28/11	Acquisition Management for Technical Personnel	32*	Grand Junction, CO (Office of Legacy Mgmt)	Level 1 Core Course	000145/0031	None
10/24/11	10/28/11	Cost & Schedule Estimation	35*	Albuquerque, NM (Alb. Operations Center)	Level 2 Core Course	001044/0015	None
10/31/11	11/2/11	Performance-Based Management Contracting	21*	Livermore, CA (Lawrence Livermore National Laboratory)	Level 1 Core Course	001951	Per Betty Warrior[3]
10/31/11	11/3/11	Federal Budgeting Process in DOE	28*	Albuquerque, NM (Alb. Operations Center)	Level 2 Elective	001034/0022	None

For the corresponding classes, registration is restricted to the designated organization unless prior arrangements are made with the following individuals:

[1]Contact Semi Bird, 509-376-1665, semi_bird@rl.gov

[2]Contact Debbie Williams, 208-526-8771, williadb@id.doe.gov

[3]Contact Betty Warrior, 505-245-2127, betty.warrior@hq.doe.gov

[4]Contact Alejandro Baez, 803-952-3456, alejandro.baez@srs.gov

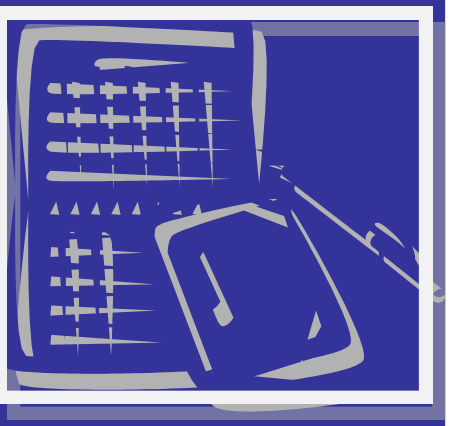
[5]Contact Jennifer Praesal, 301-903-0062, jennifer.praesal@nnsa.doe.gov

[6]Contact Shawn Mason, 202-586-8862, shawn.mason@ee.doe.gov

Note: Asterisked courses are PMI registered, so they carry the same number of PDUs as CEUs

Full PMCDP Course Schedule

For the full listing of FY2011 & FY2012 classes, visit the PMCDP website at http://energy.gov/sites/prod/files/pmcdp_courses_0.pdf and click on the "course schedule" link that appears on the "Training" page.



Federal Project Director (FPD) Corner

By Victoria C. Barth, MA ISD, OECM

Certification Review Board Interviews

Prior to granting certification, the Certification Review Board (CRB) conducts interviews for Level III and IV applicants. Because Level III and IV projects are the most challenging, the Board wants assurance that anyone granted a Level III or IV certification possesses the requisite technical, leadership and communications competence to ensure success.

Candidates are given questions the day before the interview to allow them time to prepare. To prepare your responses, read each question carefully and be sure to address the question in your response. The CRB has developed the following interview recommendations:

- **Find a quiet, private place** – candidates should be alone during the interview and in a place free of distractions.
- **Stay on topic** –candidates should address all points highlighted by the question and avoid superfluous information.
- **Be succinct** – two to three minutes per response is generally preferred and will allow adequate time for follow-on questions.

Information about the CRB's interview requirement is located on page 5-4 of PMCDP's Certification and Equivalency Guidelines (CEG). For more helpful hints and additional information about the interview format, please reference the CRB's Interview Guidance document located on the PMCDP website:

http://energy.gov/sites/prod/files/CRB_Interview_Guidance.pdf

Questions or Comments?

Please email general questions and comments about PMCDP to PMCDP.Administration@hq.doe.gov,

or visit our website at its new address

http://tinyurl.com/pmcdp

Please update the URL in your bookmarks.

For specific information, please contact one of the following individuals:

- Linda Ott, PMP, MA Adult Ed - PMCDP Team Lead, Linda.Ott@hq.doe.gov
- Victoria C. Barth, MA ISD - Course Schedule, Certification Review Board (CRB) information, Certification and Equivalency Guide (CEG): Victoria.Barth@hq.doe.gov
- Peter J. O'Konski, P.E., CEM, PMP, LEED AP, CCE, CFM, Director, Office of Facilities Management and Professional Development: Peter.OKonski@hq.doe.gov