



DOE PROJECT MANAGEMENT NEWS

Promoting Project Management Excellence

OCTOBER 2021



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Director's Corner

Fiscal Year (FY) 2021 was a banner year for our Federal Project Directors (FPDs). While FPD certifications have averaged in the mid-20s in recent years, in FY2021, 34 FPDs received either their initial certification (17) or advanced certification (17), including three Level 4s and eight Level 3s. Congratulations!

Independent project reviews are a widely recognized best practice. The Office of Project Management (PM) conducts independent cost estimates (ICEs) for all projects with a total project cost greater than \$100 million. These ICEs are required by statute Public Law 112-74 prior to the approval of critical decision (CD)-2, *Approve Performance Baseline* or CD-3, *Approve Start of Construction*. The ICE is an input into PM's External Independent Review (EIR) or the Office of Science's independent project review (IPR), which are required by Secretarial policy, as codified in Department of Energy (DOE) Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. These reviews are critical to ensuring the Project Management Executive has an unbiased assessment of whether the project can be executed within the proposed scope, schedule, and cost while meeting its key performance parameters (KPP) and fulfilling its mission need. You can learn more about the ICE and EIR process in the article on page 2.

Another recognized best practice is the use of a disciplined project controls system. Secretarial policy requires the use of an earned value management system (EVMS) for all projects whose value exceeds \$50 million executed via cost reimbursable contracts. DOE Order 413.3B requires the contractor to *Employ an Earned Value Management System compliant with EIA-748C, or as required by the contract prior to CD-2*. Prior to CD-3, the contractor must *Employ a certified Earned Value Management System compliant with EIA-748C, or as required by the contract*. PM is the certification authority for projects with a total project cost (TPC) greater than \$100 million. A project management best practice is to design, develop, and implement a project management system that complies with EIA-748 and integrates the technical, schedule, and cost parameters of the project as it matures between CD-1 and CD-2. If the project site already has an established EVMS, the time between CD-1 and CD-2 should be used to validate that the system continues to meet its intended purpose through ongoing surveillance. Additional information on implementing a compliant EVMS can be found in the article on page 4.

Now that fall is upon us and schools are once again open, it may be time to consider what project management skills you might want to brush up on. The FY2022 Q1 Project Management Career Development Program (PMCDP) Training Schedule is available at <https://community.max.gov/x/BgZcQw>. I encourage everyone in the project management community to take advantage of these courses. Additional information on PMCDP and the Training Schedule can be found on page 7. Keep charging!

Paul Bosco

Independent Cost Estimates (ICE) and External Independent Reviews (EIR)

Perry Barker, Office of Project Analysis (PM-20)

This month's newsletter article begins the first in a three-article series that focuses on post-critical decision (CD)-1, *Approve Alternative Selection and Cost Range/pre-CD-2/3, Approve Performance Baseline/ Approve Start of Construction or Execution*, phase of a Department of Energy (DOE) Order (O) 413.3B, *Program and Project Management of the Acquisition of Capital Assets*, project. This first article provides an overview of independent cost estimates and external independent reviews, specifically what they are, who does them, and how they are used. Note in this article, as is general practice with ongoing DOE O 413.3B projects, CD-2 and CD-3 are assumed to be tailored as a combined action; if not, then a separate ICE and EIR would be required before each ICE or EIR decision.

Prior to baselining capital asset projects within the Department of Energy (DOE) with a total project cost (TPC) greater than \$100M, an ICE and EIR are required. Federal statute specifically requires an ICE and DOE Policy specifically requires both an ICE and EIR to support the Project Management Executive (PME) decision making and set the project team up for successful project delivery. The ICE is developed ahead of the EIR and ensures all scope elements are captured in the estimate, as well as providing a high-resolution of the cost, schedule and risk basis that is later factored into the EIR to support validation of a project's performance baseline (PB), inclusive of the TPC and CD-4, *Approve Start of Operations / Project Completion*. ICEs and EIRs at this stage of a project that fall under DOE O 413.3B are completed by the Office of Project Management (PM), Project Analysts Division (PM-20).



The ICE and EIR are a hand-and-glove effort to provide the best perspective of a project's PB. Per policy established by the Deputy Secretary, costs associated with conducting an ICE are the responsibility of the respective DOE program office, while the cost of conducting an EIR is funded by PM as part of their operating budget. Both ICE and EIR teams are led by a PM-20 Project Analyst and are usually composed of federal and support contractor staff subject matter experts (SMEs) from the functional areas of cost, schedule, risk, management, project controls (including the project's Earned Value Management System), technical, start-up and commissioning and ESH&Q (Environmental, Safety, Health & Quality), Safeguards and Security, with each bringing unique expertise to their respective team.

An ICE analyzes the three primary areas of cost, schedule, and risk to independently develop a total cost and completion schedule for the project.

Continued on Page 3.

DOE O 413.3B (Chg 6), Appendix A, Table 2.2 (Page A-10)

Appendix A A-10	DOE O 413.3B 11-29-2010
Table 2.2 CD-2 Requirements¹	
Prior to CD-2	Approval Authority²
Perform a <u>Performance Baseline External Independent Review (EIR)</u> or an <u>Independent Project Review (IPR)</u> . PM will conduct EIRs to validate the PB for projects with a TPC \geq \$100M. PM must issue a Performance Baseline Validation Letter to the PSO that describes the cost, schedule, and scope being validated. PMSO will conduct IPRs to validate the PB for projects with a TPC < \$100M. (Refer to DOE G 413.3-9)	PM \geq \$100M PMSO < \$100M
For projects with a TPC \geq \$100M, PM will develop an <u>Independent Cost Estimate (ICE)</u> . The ICE will support validation of the PB.	

The ICE Team builds an external cost estimate based on the same technical and procurement information employed by the project team through what is called an integrated cost, schedule and risk model often referred to as an ICSR. The ICSR incorporates Monte Carlo risk assessment techniques with data provided from the project's risk register to best determine both the TPC and CD-4 (Project Completion) date. After the ICSR develops TPC and CD-4 data, this information is then reconciled against the project team's existing estimate to establish the most realistic estimate as to what the project will cost. This information is then made available to the EIR team to further assess the project and finalize the recommended TPC and CD-4. Of note, the reconciliation process of an ICE is not a negotiation or an "agreement to split the difference" between the project team's estimate and the ICE, but rather a time for each party to better understand the other's estimate methodology and adjust as appropriate. The end result of a reconciliation is rarely both the project team's estimate and ICE team estimate being exactly equal, and that is to be expected as estimating methodologies are unique. Hopefully, they are close.

An EIR looks beyond the cost, schedule, and risk generated from the ICE, and focuses on other project attributes such as management and acquisition, project controls/earned value management systems, environment, safety health, and quality assurance, safeguards and security, startup/commissioning, and the project's transfer to operations plan. The assessment of these areas provides confidence the project can be executed within cost, scope, and schedule for successful mission need.

Outputs from the EIR are in the form of major findings, findings, and observations. The EIR team makes its determination of major findings, findings, and observations based on best practices and nonconformance with requirements found in DOE orders or policies. Major findings and findings are captured within a corrective action plan (CAP) developed by the project team and approved by the EIR team prior to the proposed PB being approved. Observations are provided for project team awareness and appropriate action only. All major findings must be resolved prior to issuance of a PB validation memorandum. Findings should be resolved as per the agreed upon timeline in the CAP, which is frequently post CD-2/3 approval.

Both the final ICE and EIR reports are provided directly to the PME for their consideration in approval of the CD-2/3. Any significant differences between the ICE/EIR recommended TPC or CD-4 as compared to the project team's final estimate are highlighted to the PME so that they can understand the basis of the difference and make the most informed decision when establishing the PB.

Conducting and documenting an ICE and EIR are critical actions prior to establishing a project's PB and initiating construction. They ensure a project "starts off" on a sound cost and schedule basis, considering the total environment of functional areas and factors that may affect a project as it moves through its DOE O 413.3B lifecycle to completion. Should you have any questions about conducting an ICE or EIR, please contact your assigned PM-20 Project Analyst to help ensure this phase of your project moves forward in a timely manner to best support your successful project completion.



Congratulations to our newly certified FPDs!

Level III

Jud Lilly (EM)

Level II

Jesse Saldivar (SC)

Levels II & I

Stanford Dickson (SC)

Karen Antizzo (NNSA)

EVMS Implementation Prior to Critical Decision (CD)-2: It Does Matter

Kevin Carney and Daniel Goldsmith,
Office of Project Controls (PM-30)

Employ an Earned Value Management System compliant with EIA-748C, or as required by the contract. This is performed by the contractor. (Refer to DOE G 413.3-10A.)

- DOE Order 413.3B, Table 2.2 CD-2 Requirements

For capital asset projects greater than or equal to \$50M, the requirement to implement an EIA-748 compliant earned value management system (EVMS) starts before critical decision CD-2 (i.e., following CD-1 approval) and continues through the completion of CD-4 (as shown in Figure 1). For capital asset projects greater than or equal to \$100M, the EVMS must also go through an additional step. For these projects, the contractor must implement an EVMS that has been determined by the Office of Project Management (PM), the cognizant federal agency (CFA), to be compliant with EIA-748. This step is accomplished through an EVMS certification review as specified by the DOE Order 413.3B.

Moving from CD-1 to CD-2 (or a combined CD-2 and CD-3) entails gaining an understanding of mission objectives and performance requirements to develop a final cost and schedule estimate. An important concept employed during this period involves the development of independent cost estimates (ICE) to confirm the project's performance baseline (PB) at CD-2 (or a combined CD-2 and CD-3) which is used to inform the Congressional budget request. While scope and key project performance parameters are typically not as well defined during this period, a sufficient definition of scope should exist to allow for the implementation of the EVMS and the development of a summary level resource-loaded integrated master schedule (IMS) through CD-4, *Start of Operations*, and the associated Performance Measurement Baseline (PMB) to reflect the top-end of the CD-1 cost estimate and project completion date ranges.

Recent Office of Project Management (PM) reviews have shown that confusion remains over the expected implementation of the EVMS prior to CD-2. For those projects at a site without an established EVMS, the time between CD-1 and CD-2 should be used to design, develop, and implement a management system that complies with EIA-748 and integrates the technical, schedule, and cost parameters of the project.

In designing the EVMS, the objective should be to do what makes sense. Projects have the flexibility to design and develop an EVMS most suited to their management needs. In instances where project sites already have an established EVMS, the time between CD-1 and CD-2 should be used to validate that the system continues to meet its intended purpose through ongoing surveillance. Wherever necessary, adjustments should be made (in consultation with PM) to maintain compliance with EIA-748.



The Federal Project Director (FPD) must understand that the implementation of the EVMS during this period is much more than a dry run for its use at CD-2 (or a combined CD-2 and CD-3) approval. Rather, its active use between CD-1 and CD-2 approval is required and depended upon for managing and reporting preliminary engineering design work and developing the project's PB. Updates to alternatives and/or approaches resulting in changes to the CD-1 top-end cost estimate and project completion date range should be made following the EVMS change control process. The expectation is to provide this assessment using credible data that comes from a compliant EVMS. This should be confirmed during a PM-led external independent review (EIR) which looks to provide the FPD, Project Management Executives, senior leaders within the Department of Energy (DOE), and Congress with an unbiased assessment of whether a capital asset project can be executed within scope, schedule, and cost commitments.

In order to simplify the EVMS compliance determination process, PM is in the latter stages of developing an EVMS maturity model rating index called the Integrated project/program management (IP2M) maturity and environment total risk rating (METRR) (<https://community.max.gov/x/aKcBh>) that enables projects to consistently assess the effectiveness of the EVMS.

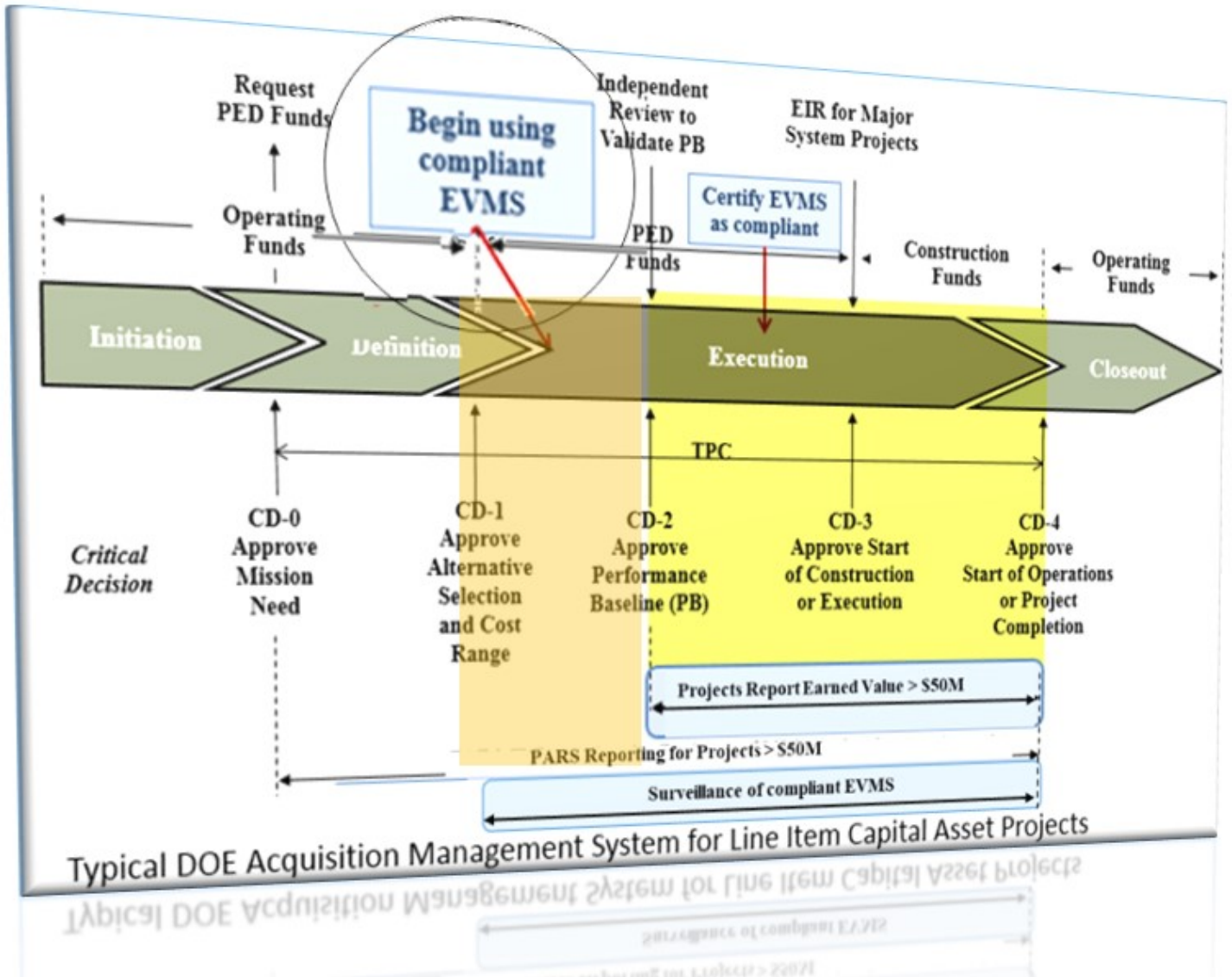
Continued on Page 5.

Much like a FICO® score, which is calculated from many different pieces of credit data in an individual's credit report, an EVMS rating index is generated to quantify the maturity of a management system and its environment, both individually and collectively. (For more insights on this achievement please also reference the March 2021 and April 2021 PM Newsletters found on [PM-MAX](#).)

In summary, for capital asset projects greater than or equal to \$50M, the importance of managing work between CD-1 and CD-2 using an EIA-748 compliant EVMS should not be diminished regardless of its positioning in the DOE CD approval process.

While scope and key performance parameters are typically not as well defined (or completely understood) during this period, this is when the project establishes its initial resource loaded IMS through CD-4 and its PMB to match CD-1 top-end estimates (cost and schedule). The EVMS should be used to refine each in order to achieve approval of the PB at CD-2 (or a combined CD-2 and CD-3). As the project moves to a single point cost estimate and CD-4 completion date with the CD-2 PB, it is common practice (and acceptable) for projects to finalize a detailed resource-loaded IMS and its associated PMB by executing a single point adjustment (SPA). By eliminating pre-CD-2 cumulative performance variances, replanning remaining work, and reallocating the remaining budget the EVMS can best focus on the performance and progress being made for the completion of the design effort and start of construction (once again) following the EVMS change control process.

Figure 1. Typical DOE Acquisition Management System for Line Item Capital Asset Projects



PMCDP FY2022 Training Plan/Training Strategy

Ruby Giles, Professional Development Division (PM-40)

Whether you are seeking to attain your initial certification as an Federal Project Director (FPD), to advance to the next level, or to earn continuous learning points to maintain your current FPD level, the Project Management Career Development Program (PMCDP) will offer numerous opportunities throughout the year to expand and enhance your knowledge.

The PMCDP Training Schedule is built using data and feedback from past years' classes and direction from the PMCDP Certification Review Board. PMCDP will continue to determine training needs based on input from Department of Energy (DOE)'s project management community.

Key elements of the FY22 Training Schedule include:

- Priority is given to FPDs seeking certification
- All PMCDP classes are planned to be offered twice in FY22; an updated Advanced Risk Management will be added to the training schedule sometime in calendar year 2022
- All training will remain virtual
- The FY22 full training schedule is available on [PM-MAX](#)
- PMCDP classes are funded through the Working Capital Fund (WCF), so training costs are covered in the PMCDP business line

The PMCDP catalog in the Learning Nucleus (LN) divides the Federal Project Director (FPD) certification curriculum into two sections - "On-Demand" and "Instructor-Led" training. The on-demand courses are available anytime to any federal employee with access to the LN. Several PMCDP courses - *Project Management Essentials*, *Environmental Laws and Regulations*, *EVMS 24/7*, and *Scheduling 24/7* - are available in the on-demand format.

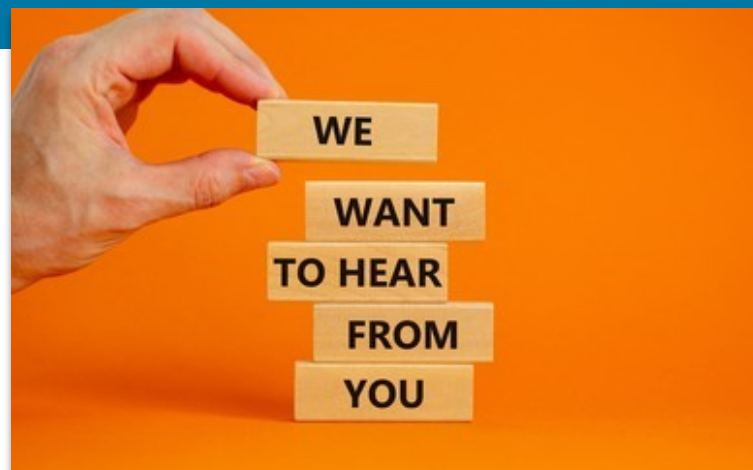
Instructor-led virtual courses must be scheduled and opened for registration by PMCDP. When an instructor-led course is not scheduled or an employee is not available to attend a scheduled course, employees may use the "Interested in the class" feature within the LN to be notified of future offerings. PMCDP will also use the interest in courses to inform the PMCDP training schedule. If you are interested in any PMCDP course and there is no class offering scheduled for the course, use the feature and PMCDP will consider your input in determining if sufficient demand exists to support additional course deliveries. You will find the "interested in a class" feature within LN in the PMCDP catalog.

For FY22 PMCDP has worked with our vendors to implement a robust virtual course delivery schedule that provides numerous virtual training opportunities at each PMCDP level, during each quarter, allowing opportunities for Required and Elective courses for participants to maintain and achieve certification.

PMCDP will keep you posted of any additional changes as they develop.

Earn a CLP for reading the PM newsletter and providing feedback.

[Click here!](#)



HAPPY (FISCAL) NEW YEAR!



PMCDP FY22 Q1 Training Schedule

The training schedule is posted on PM-MAX. Save the direct link to the Project Management Career Development Program PMCDP Training Schedule to your favorites: <https://community.max.gov/x/BgZcQw>

Course Title	Dates	CLPs	LN Code	Details
Leadership Through Effective Communication	October 12-14, 2021	24	002366	10:30am-4:30pm EDT Webinar Daily
Cost and Schedule Estimation	October 25-29, 2021	40	001044	10:30am-4:30pm EDT Webinar Daily
Scope Management and Baseline Development	November 15-18, 2021	24	001036	10:30am-4:30pm EST Webinar Daily
Strategic Planning	November 16-18, 2021	24	001043	10:30am-4:30pm EST Webinar Daily
Capital Planning for DOE O 413.3B	5 Sessions November 30, December 2, 7, 9, 14, 2021	16	002152	(Tue/Thurs) 12-3pm EST Webinar
Facilitating Conflict Resolution	4 Sessions December 1, 6, 8, 13, 2021	24	001558	(Wed/Mon) 12pm-4pm EST Webinar
Managing Contract Changes	December 14-17, 2021	32	002102	10:30am-4:30pm EST Webinar Daily

Be sure to look for the full FY22 Training Schedule in next month's issue of *DOE Project Management News!*

Find up-to-date information and resources anytime! PM axi

All PMCDP Course Descriptions and Course Materials can be found in the Course Catalog on Save the direct link to your favorites: <https://community.max.gov/x/UAT3Rw>



Or download the Interactive Curriculum Map: <https://community.max.gov/x/sQd1Qw>

Have a question, found a bug or glitch in a PMCDP online course, or want to provide feedback? Submit your questions through PMCDPOnlineCourseSupport@hq.doe.gov.

Contact Us!

The Office of Project Management welcomes your comments on the Department's policies related to DOE Order 413.3B. Please report errors, omissions, ambiguities, and contradictions to PMpolicy@hq.doe.gov. Propose improvements to policies at <https://hq.ideascale.com>.

If you have technical questions about PARS, such as how to reset your password, please contact the PARS Help Desk at PARS_Support@Hq.Doe.Gov. And as always, PARS documentation, frequently asked questions (FAQs) and other helpful information can be found at <https://pars2oa.doe.gov/support/Shared%20Documents/Forms/AllItems.aspx>.

The current PARS reporting schedule is located in PM-MAX at the following link <https://community.max.gov/x/m4IIY>.

Need information to apply for FPD certification? The Certification and Equivalency Guidelines (CEG) can be found here <https://community.max.gov/x/IQd1Qw>.

Can't put your finger on a document or information you were told is available on PM-MAX? Looking for information on DOE Project Management? Submit your questions and queries to PMWebmaster@doe.gov.

To reach the Professional Development Division team:



Linda Ott — Division Director for Professional Development, PMCDP Program Manager, FPD Certifications Manager, PM Newsletter Editor, Linda.Ott@hq.doe.gov, 240-474-7721



Sigmond Ceaser — Alternate Delivery Platforms, PMCDP Review Recommendations Lead, PMCDP Curriculum Manager, Sigmond.Ceaser@hq.doe.gov



Ruby Giles — PMCDP Budget Manager, PMCDP Training Coordinator and Training Delivery Manager, Course Audit Program, Ruby.Giles@hq.doe.gov

If you would like to contribute an article to the Newsletter or want to provide feedback, contact the Editor at DL-PM-40.

