



DOE PROJECT MANAGEMENT NEWS

Promoting Project Management Excellence

April 2024



IN THIS ISSUE:

- Director’s Corner.....1
- Overview of DOE G 413.3-2.....2
- Dialing in the Data: iEAC(PMDA).....4
- PARS User Interface Improvements.....8
- IP2M METRR Training of the Month.....9
- Congrats to Our New FPDs.....9
- PMCDP Training Schedule.....10
- PM Workshop Notice.....10
- Contact Us.....11
- Rate Your PM Newsletter Experience.....11



DIRECTOR’S CORNER

The Department of Energy (DOE)'s Quality Assurance (QA) Guide, G 413.3-2, *Quality Assurance Guide for Project Management*, provides a framework for Federal Project Directors (FPDs) to develop and oversee project-specific QA programs. It helps ensure compliance with DOE Order, O 414.1D, *Quality Assurance*, throughout the project lifecycle, from design to decommissioning.

With an emphasis on the importance of clear communication, delineation of responsibilities, and the need for qualified personnel, the QA guide offers recommended approaches for FPDs and their teams to implement QA programs in line with DOE Order 413.3B. Learn more about the FPD's role and responsibilities, and how the guide can help an FPD develop and implement a project-specific QA program in the article on page 2.

Successful project management requires accurate forecasts for project completion. Traditional estimate at completion (EAC) forecasts often have several shortfalls including linear assumptions, a focus on cost over time, an inadequate response to variances, and optimism bias. PM’s data analytics team is developing a more sophisticated forecasting method that integrates time and cost factors and acknowledges the dynamic nature of project execution. Additional insight into this innovative approach can be found in the article on page 4.

As a reminder, the 2024 DOE Project Management Workshop is only days away. It will be held at the Hilton Washington DC National Mall The Wharf on April 2nd & 3rd with a half-day project controls session on April 4th. Additional information on the Workshop is available at: <https://www.energy.gov/projectmanagement/2024-department-energy-project-management-workshop>. We hope to see you there!

Keep Charging!

Paul Bosco

AN OVERVIEW OF DOE GUIDE 413.3-2— QUALITY ASSURANCE GUIDE FOR PROJECT MANAGEMENT

Catherine Donohue, Office of Project Analysis (PM-20)

This article provides a high-level summary of Department of Energy (DOE) Guide 413.3-2, *Quality Assurance Guide for Project Management*, (aka, “QA Guide”). This Guide describes suggested approaches for meeting DOE requirements for developing a quality assurance program (QAP). A QAP is a management system to help an organization “do work correctly.” This Guide provides information to assist DOE federal project directors (FPDs) and their integrated project teams (IPTs) in identifying and implementing their QA-related roles and responsibilities. The guide methodology outlines the structure and approach for ensuring quality assurance is applied within the context of DOE G 413.3A. It provides a framework for understanding and implementing quality assurance practices throughout the project lifecycle and at each critical decision (CD).

There are various sources of quality assurance standards and guidelines that inform the development of a comprehensive quality assurance strategy. The DOE Order 414.1D, Chg 2, *Quality Assurance*, (aka, “QA Order”) specifies requirements and provides guidance and information on principles and practices to establish and implement an effective QAP. The methods and references described in this Guide are meant to supplement and be used in conjunction with DOE O 414.1D and will facilitate the development of a compliant QAP for nuclear projects. Use of the Order and Guide will also help ensure that the development and implementation of a project’s QAP will be compliant with 10 CFR 830 Subpart A (i.e., QA Rule). DOE directives and guides related to QA are summarized in Appendix A.

The QA Guide methodology outlines the structure and approach for ensuring QA in project management and provides a framework for understanding and implementing QA practices throughout the project life cycle. The Guide emphasizes the importance of leveraging industry

best practices and regulatory requirements to ensure project quality and consistent with Project Management Best Practice to plan early.



Crafting a robust quality assurance strategy tailored to the specific needs and objectives of the project is recommended. As early in the acquisition process as practicable the FPD should decide whether to use:

1. an existing site-wide QAP
2. the contractor’s corporate QAP
3. develop a project-specific QAP

Where practicable it is recommended to use an existing QAP; however, using an existing QAP on large, complex, or unique project may not be viable. In these cases, the contractor should be encouraged to develop a project specific QAP. Lessons learned have shown it prudent for the FPD to perform a GAP analysis between existing QAP and project specific QAP. The QAP should be specifically referenced in the project execution plan (PEP). It is vitally important that required and expected documentation is clearly identified early in the project and that activities to collect, review, and control the documents are also defined early in the project life cycle. Key steps to developing a QA strategy and QAP are:

- Ensure that QA requirements are documented in vendor or subcontractor contracts.
- Address when and where the QA oversight and reporting chain will exist in the project and contractor organizations (i.e., who reports to whom).
- Identify the applicable DOE QA requirements from DOE O 414.1D, 10 CFR 830 and
- Subpart A, or 10 CFR 63.142 and applicable voluntary consensus standard or standards, such as NQA-1, International Organization for Standardization (ISO) 9000, etc.
- Ensure implementing procedures are developed and implemented before the requisite work is performed.
- Evaluate the adequacy of the project-specific QAP or the corresponding contractor’s project-specific QAP.
- Ensure the availability of appropriate personnel resources to support project specific QAP implementation, including QA oversight.
- Identify key QA leaders in the DOE and contractor organizations.
- Identify document control and records management systems, consistent with applicable codes, regulations, and directives.



Continued on Page 3.

Focus should be on crafting a robust QA strategy and QAP tailored to the specific needs and objectives of the project. This involves defining clear quality objectives, establishing quality criteria, and outlining the responsibilities of QA professionals and key stakeholders in ensuring project quality. An effective organizational structure should be established and documented in the QAP. A high-level outline for the QAP has the three major components:

1. Organization Structure
2. Consensus Standard
3. Graded Approach

When developing the QAP, the FPD should, where consistent with contract or regulatory requirements:

- Implement the QA criteria identified in the DOE QA Order using a graded approach
- Use national or international consensus standards and identify the standards used
- Apply additional standards as necessary to address unique/specific work activities
- Integrate QA criteria as defined in the DOE O 414.1D

Every project needs to clearly define responsibilities, interfaces, and organizational accountability. The FPD should define how to work with management, the IPT, and other participants, including the contractors to ensure safety and quality. The FPD focuses on assessing and verifying that the contractor has executed its QA related contractual obligations. The contractor obligations typically include QAP development and implementation to the working-level execution with a graded approach. The contractor is ultimately responsible for complying with the requirements of the contractor requirements document (CRD) and the flowing down of CRD requirements to subcontractors at any tier.

The project's application of QA is documented in the QAP. The quality consensus standard that will be used on the project is identified in the QAP. Adoption of quality consensus standards relevant to the project involves selecting standards that align with the project objectives and regulatory requirements to guide quality assurance activities. The FPD should ensure the consensus standard meets the project-specific quality requirements and closely reflects the anticipated work. If a voluntary standard is adopted in the QAP, compliance with the standard is required and is no longer considered "voluntary."

For construction of facilities that include nuclear-related activities, it is acceptable and appropriate to apply NQA-1 on a graded basis for the entire facility. A graded approach should be used for developing the project's QAP. The graded approach emphasizes the importance of tailoring quality assurance practices to the specific needs and characteristics of the project. It advocates for a flexible approach that scales the level of rigor and oversight based on project complexity, risk factors, and other considerations. At the point when structures, systems, and components (SSC) are known, the FPD should develop a list of items and activities and determine the significance to the success of the project considering the list of seven items below. Grading is the process of ensuring that the levels of analyses, documentation, and actions used to comply with requirements are commensurate with:



1. the relative importance to safety, safeguards, and security
2. the magnitude of any hazard involved
3. the life-cycle stage of a facility or item
4. the programmatic mission of a facility
5. the particular characteristics of a facility or item
6. the relative importance to radiological and non-radiological hazard
7. any other relevant factors (10 C.F.R. § 830.3)

Although many approaches can be used, the typical approach is to establish quality levels (e.g., 1, 2, 3 and 4) and attributing the most risk sensitive classification requiring the most rigorous application of the QA requirement to quality level 1. The graded approach should never be graded to zero—elimination of requirements is not acceptable. The least stringent application of the graded approach processes, compliance with the applicable requirements, is mandatory.

The graded approach is helpful when using an existing QAP for an organization that may have established the QAP on more than one quality consensus standard and need to modify it for an additional nuclear or non-nuclear need. While some standards are unique to each standard there are common requirements. A value-added matrix is provided as Appendix C to the Guide and provides an illustrative crosswalk of similarities and differences between DOE's QA requirements contained in 10 CFR 830 Subpart A and DOE O 414.1D, and two voluntary consensus standards, ISO 9001:2000 and NQA-1-2000.

Continued on Page 4.

Section 4.4 of the QA Guide summarizes important QA-related considerations for the FPD to consider at each critical decision (CD) as identified in DOE O 413.3B. Appendix D contains tables for each CD that can be used by FPDs as checklists against which to conduct independent assessments of work and presents a crosswalk of key products and activities supporting CD-2 requirements.

The criteria of the DOE QA rule and QA Order are broadly written to allow the FPD to determine how best to apply these documents to the project. This Guide also contains five appendices to assist the FPD in establishing their project specific QAP:

1. Appendix A. DOE Directives and Guides Related to Quality Assurance
2. Appendix B. Voluntary Consensus Standards
3. Appendix C. Quality Assurance Attributes/ Characteristics, and Identification of Value-Added Matrix
4. Appendix D. Suggested QA Activities to Support Critical Decision Requirements
5. Appendix E. Lessons Learned

The methods and references described in the QA Guide are meant to supplement and be used in conjunction with appropriate DOE standard and will facilitate the FPD development of a QAP compliant with DOE Order 414.1D (QA) and DOE O 413.3B. For nuclear projects the FPD should also ensure implementation of a QAP compliant with 10 CFR 830 Subpart A (i.e., “the QA Rule”).



By developing a comprehensive quality assurance strategy/program early in the project life cycle FPDs can better mitigate project risks and ensure their projects are meeting the expected quality standards and performance levels.

DIALING IN THE DATA: iEAC(PMDA)'S PREDICTIVE PHONE A FUTURE

Roxy Franks, Brian Kong, and Bob Ogrodnik, Office of Project Controls and Policy (PM-30)

This article provides insights from a recent technical paper submitted by the Office of Project Management to the Association for the Advancement of Cost Engineering (AACE) International that is sure to make waves in the world of project controls and management. The paper discusses the independent estimate-at-completion (iEAC) Project Management Data Analytics (PMDA) based on the performance baseline-contract (PB-K) tool that's changing how the Department of Energy (DOE) forecasts and manages project outcomes.

In the realm of project management, the ability to forecast the ultimate completion point of a project, both in terms of cost and schedule, is not just a luxury—it is a necessity. This is where the iEAC becomes a pivotal tool for DOE's project management teams. The iEAC, generated by the PB-K graph [hereafter referred to as iEAC(PMDA)], is more than a mere projection; it is the linchpin of informed decision-making to steer projects toward successful completion within the approved parameters.

Understanding the iEAC(PMDA) Landscape

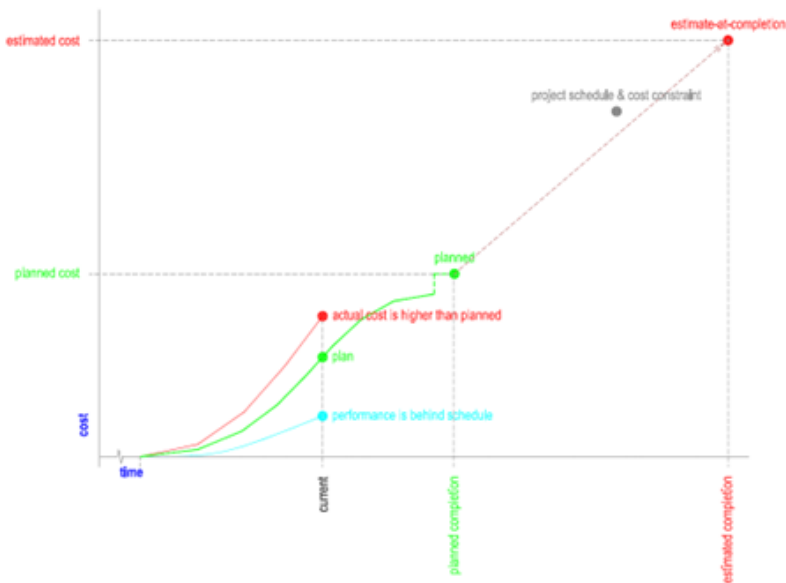
At the heart of project management is the ability to predict where we're headed. The iEAC(PMDA) is like a compass offering a data-rich perspective that combines historical performance with a forward-looking lens.

Visualizing Progress and Potential

The iEAC(PMDA) is an essential tool for dynamic project management, enabling ongoing adjustments as conditions evolve. It offers a complete overview, merging past progress with future plans to optimize project outcomes. Figure 1 provides a visual representation of your project's timeline and forecast, equipping you with solid data for strategic decisions.

Continued on Page 5.

Figure 1. Planned and Estimate-at-Completion (Notional)



The New Frontier: Beyond Traditional EAC

But why are these informed decisions so crucial? Informed decisions are the backbone of project success. Without the clarity provided by iEAC(PMDA), projects can veer off course, exhausting resources and stretching timelines. The consequences of not leveraging iEACs can be significant – from budget overruns to delayed project completions, and the ripple effects can be felt across the Department and stakeholders.

The iEAC(PMDA) approach is about integrating time and costs in a way that traditional methods have overlooked. From the distributed budget to the federal contingency, accountability is key, with contractors and federal project directors both responsible for keeping the data in alignment.

Traditional EAC methods often fall short, the PB-K tool changes the game with its innovative approach by considering both time and costs, providing a more nuanced and accurate forecast. The iEAC(PMDA) is critical because it goes beyond traditional paths followed in the past. Leveraging this tool provides a visual representation of the plan, actual performance, and projected endpoint. It's like having a high-definition map of the project's lifecycle, which is invaluable for making informed decisions.

The Essential Elements

DOE's projects are complex, with multiple moving parts that must all work in coordination. Figure 2 and Figure 3 illustrate this symphony – from budget elements to accountability measures, all contributing to the melody of successful project management.

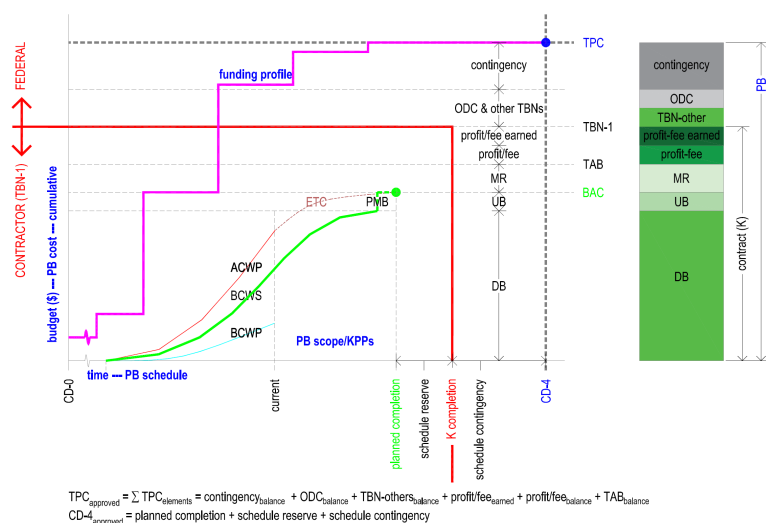


Figure 2. PB-K Graph and PB Elements (Notional)

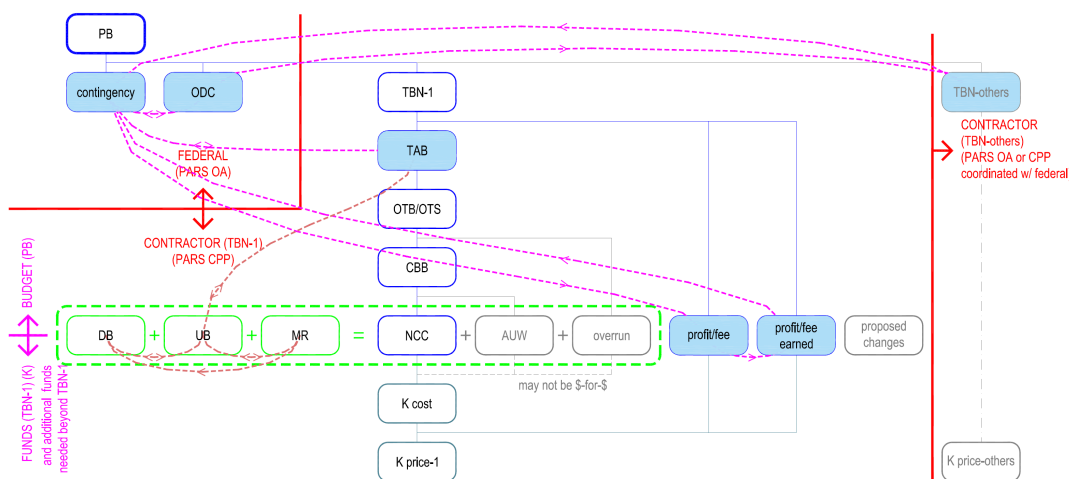
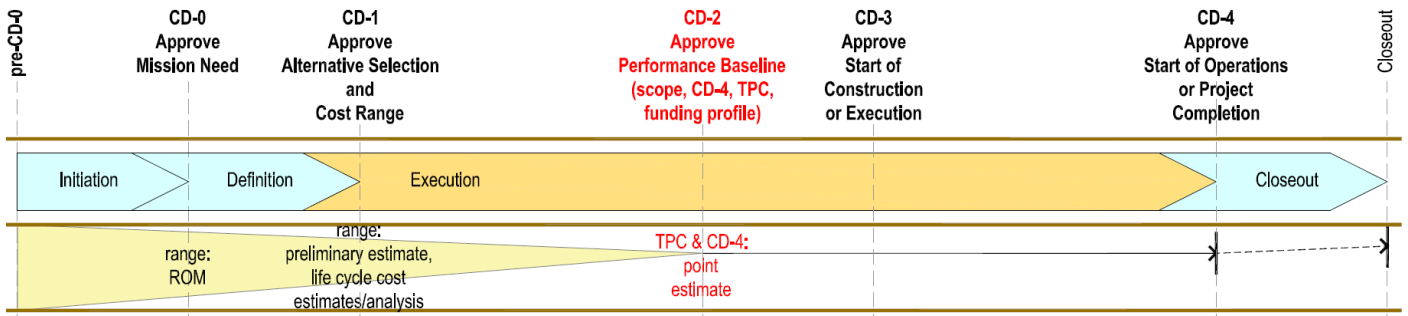


Figure 3. PB-K Chart and PB-Elements and Budget Flows (Notional)

Continued on Page 6.

Figure 4. CD Milestones and Determining Point Estimates from Schedule/Cost Ranges



Milestones and Money: The DOE Way

As a project moves from the mission need approval at critical decision (CD)-0 to the final notes of project closeout, the funding and performance baselines must stay in sync, and align with the risk-based profiles of budget needs, as shown in Figure 4 and Figure 5.

Predicting Performance: The PB-K Graph

Figure 6 compares different EAC predictions and highlights the need for proactive management actions, as depicted in Figure 7. It's about anticipating the crescendos and decrescendos in a project's performance.

The Method Behind the Magic

Calculating the iEAC(PMDA) is an intricate dance of data analytics, outlined in a step-by-step methodology that factors in everything from cost variances to risk-based analysis. It's a comprehensive approach that ensures your projects stay on tempo.

Figure 5. PB-K Profiles (Notional)

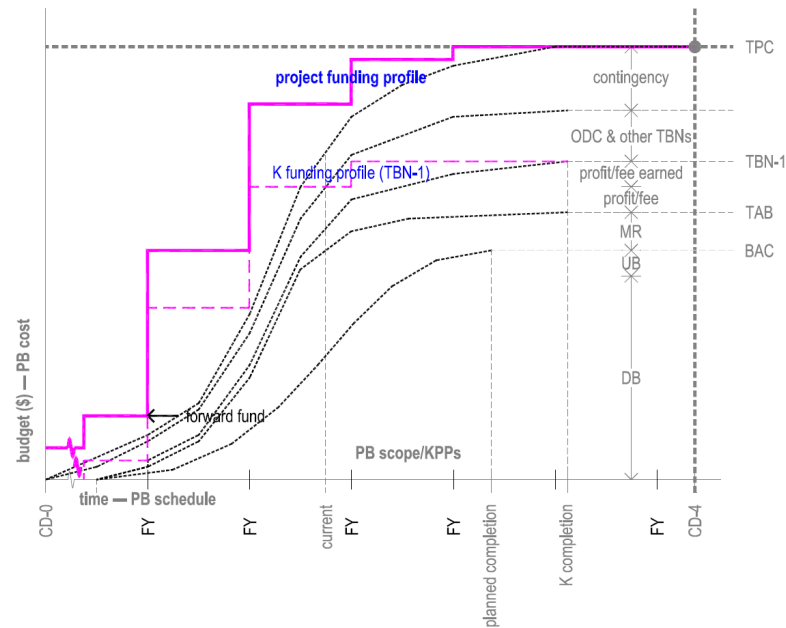
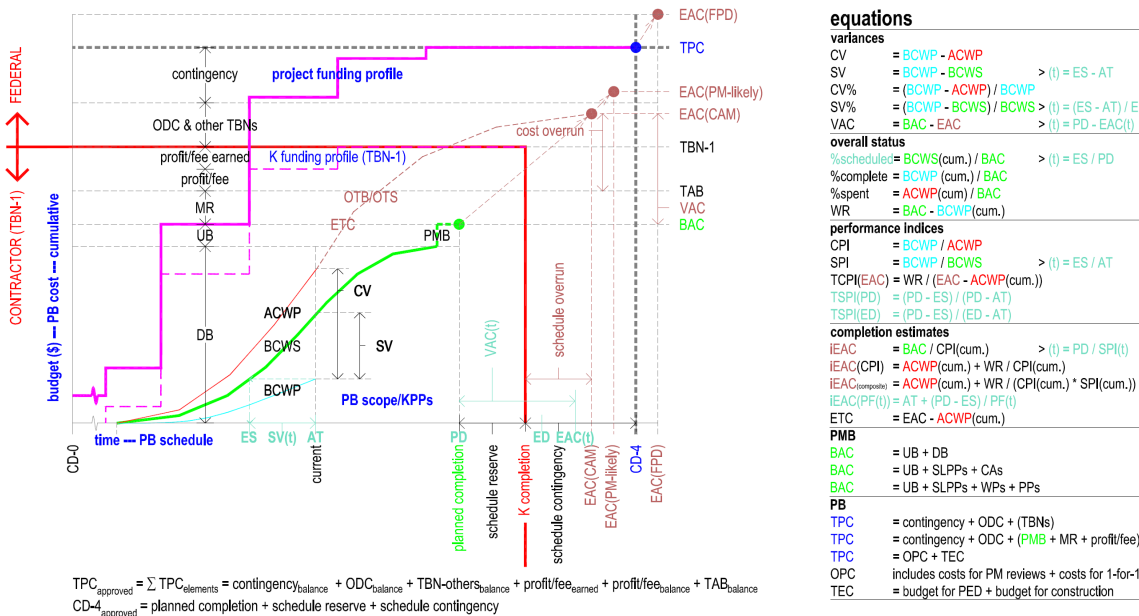


Figure 6. PB-K Graph with EACs and Equations (Notional)



Continued on Page 7.

Figure 7. Four EAC Areas (Notional)

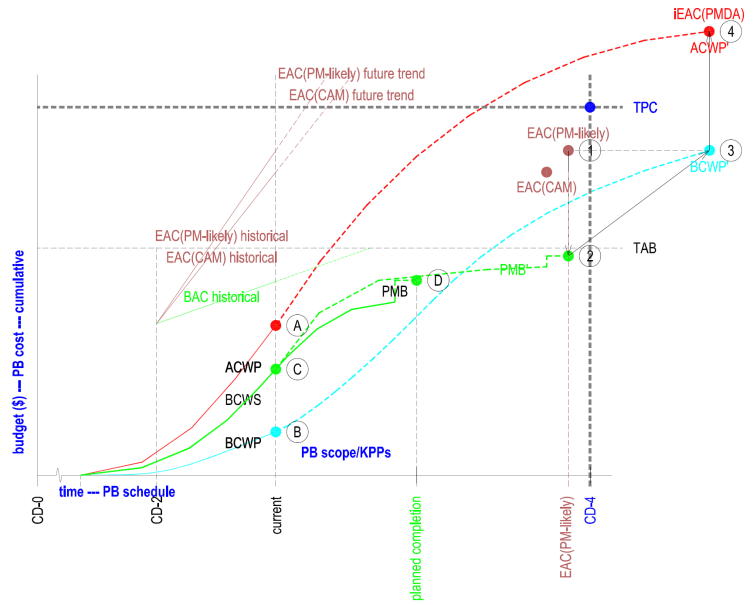
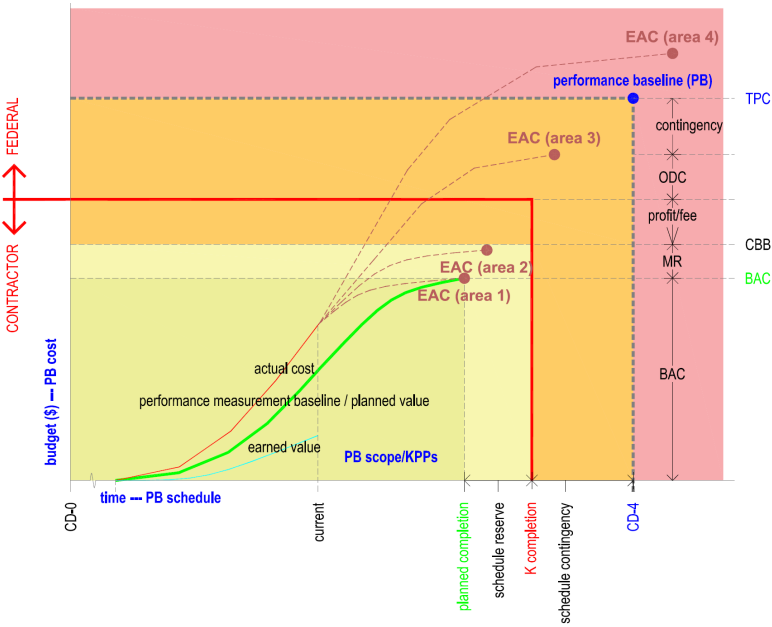


Figure 8. PB-K Graph iEAC(PMDA) (Notional)

The iEAC(PMDA) isn't just about predicting the future; it's about shaping it. It's about using data to identify optimism bias and improve project performance, increasing the confidence level of proposed project changes. It's about making decisions that are not only well-informed but also timely, ensuring that projects complete successfully within the approved scope, schedule, and cost.

The Impact of Early Detection

By identifying potential issues early, the iEAC(PMDA) allows a project team to compose a realistic and actionable plan, ensuring its projects don't just finish, but finish successfully.

Composing the iEAC(PMDA Calculation

Traditional iEACs often emphasize cost while sidelining time, and historical trends don't always capture the full scope of the performance measurement baseline (PMB) or estimate to complete (ETC) profiles. The linear trends shown in Figure 8 imply costs may exceed the total allocated budget (TAB) and total project cost (TPC) before project completion. However, these projections can miss the mark, as project trajectories are rarely linear, and the PMB's S-curve reflects a more dynamic path. Time-sensitive risks and cost factors must be woven into the iEAC to accurately reflect the project's unique journey.

Selecting the appropriate EAC is key—sometimes the control account managers' EAC leads the decision, other times the project manager's EAC resonates with the higher value.

The Continuous Improvement Process

Every project is an opportunity to learn, to refine methods, and to set the stage for even greater successes in the future. In conclusion, the iEAC(PMDA) is not just a tool; it is a revolution in project management. It is about harnessing the power of data to not only predict the future but to shape it. As we continue to refine this approach, we are looking to help you orchestrate success, not just manage a project.



PARS USER INTERFACE IMPROVEMENTS: ENHANCED USABILITY AND SECURITY

Craig Haseler, PARS Team Technical Lead

We are excited to share an update on upcoming enhancements to the Project Assessment and Reporting System (PARS) user interface (UI). These improvements reflect our ongoing commitment to streamlining the PARS project management information system, enhancing processes within PARS, and strengthening data security.

A Faster, Cleaner Interface: We have reorganized some of the PARS pages to make the information you need easier to locate. Contract information is now captured on a dedicated page, and project attributes are organized according to categories. The PB-K graph has been optimized for performance and now features additional filters and customization options.

The screenshot displays the PARS user interface. At the top is a navigation bar with the PARS logo and menu items: Projects, Contracts, Reports, Report Builder, Empower, IP2M METRR, and Help. On the left is a sidebar navigation menu with categories like Project Records, Monitoring, Analysis, and Reports. The main content area shows a project overview for 'Prior BCPs: BCP-1' with a 'Current CD' of 95.1% completion. It includes several data tables: 'Critical Decisions' (CD-0 to CD-4), 'Performance Baseline Changes' (Current BCP-2, BCP-1), 'Assessments' (PM, Program, FPD), and 'PM Assessment (Nov 2020)'. A note at the bottom right states: 'On August 17, 2020, the Deputy Secretary, as Chief Executive for Project Management (CE), approved the project's request for CD-4. Approve Start of Operations, and the Authority To Operate (ATO). CD-4 TPC (estimated) - \$2,268'.

New User Interface Coming Soon

Navigation Enhancements: An improved and simplified PARS navigation facilitates quicker access to project information. With an enhanced project navigation menu and dedicated sections for each project, you can now find what you need with fewer clicks. These changes are designed to make your workflow more efficient, allowing you to focus more on project oversight and less on navigating menus.

Security System and Login Upgrades: The security of our system remains a top priority. The upcoming updates include an enhanced authentication system using Microsoft accounts — this improves our support for PIV card login, should resolve a variety of complications introduced by cards issued by different DOE sites, and overall streamline your login flow. The first time you log in to the new system, you will be asked to set a new password, configure a two-factor authentication app, and have the opportunity to register your PIV card in the new system if you've been having issues.

Looking Ahead: We are also excited to announce that a new and improved user guide is on the horizon. This resource will further assist you in navigating the updated interface and making the most of the PARS enhancements. Stay tuned for more information. This interface also supports moving to the JSON data upload format. We will begin taking data in JSON format to our test server this month and start moving projects to this format in PARS Production in June.

We continue to work on enhancing your experience with PARS and believe these updates will positively impact your project management activities. Your feedback is crucial to us, so please share your thoughts and experiences as you explore the updated interface. The feedback tool in PARS is the best way to do so.

IP2M METRR TRAINING OF THE MONTH

IP2M METRR – Report 2: Earned Value Management System State of Practice: Identifying Critical Subprocesses, Challenges, and Environment Factors of a High-Performing EVMS.

The Integrated Project/Program Management (IP2M) Maturity and Environment Total Risk Rating (METRR) using EVMS is a novel assessment mechanism developed as part of a DOE-sponsored joint research study led by Arizona State University and representing more than fifteen government and industry organizations.

Click [here](#) to view IP2M METRR Publication– Report 2: Earned Value Management System State of Practice: Identifying Critical Subprocesses, Challenges, and Environment Factors of a High-Performing EVMS.

Summary: This report identifies challenges facing practitioners, critical EVMS subprocesses, and key EVMS environment factors, based on a large survey of 294 expert respondents. Sample respondents had project management experience of greater than 20 years on average and represented a diverse set of projects and industries (e.g., capital projects, aerospace, defense, energy, and others). The responses from this survey helped craft an agreed-upon set of definitions for EVM, EVMS, EVMS maturity, and EVMS environment that are all provided in this paper.

Continuous Learning Points (CLPs): Reviewing one hour of snippets will equate to one CLP. To receive credit, FPDs can submit a CLP request under the PMCDP menu in their ESS account. All others may send an email (indicating the snippets viewed) through their respective supervisor to DL-PM-40 to receive a certificate with the appropriate CLPs awarded.

You can find additional IP2M METRR Training at the following links:

<https://www.energy.gov/projectmanagement/training-implementing-integrated-projectprogram-management-maturity-and>
OR

<https://community.connect.gov/display/DOEExternal/PM+EVMS+IP2M+METRR+Training>

IP2M METRR Publications can be found at <https://ip2m.engineering.asu.edu/publications/>

CONGRATULATIONS TO OUR NEWLY CERTIFIED FPDs!



Level I

**Evan Albert (SC)
Christy (Veach) Brown (EM)
Colin Edward (NE)
Shawn Graham (NA)
Devin McFall (EM)**

Level III

James Daffron (EM)

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





PMCDP FY2024 TRAINING SCHEDULE

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

Course Title	LN Code	Dates	CLPs	Details
<u>Managing Contract Changes</u>	002102	April 9-12, 2024	32	10:30am-4:30pm ET Webinar Daily
<u>Negotiation Strategies and Techniques</u>	001047	April 16-18, 2024	24	10:30am-4:30pm ET Webinar Daily
<u>Scope Management Baseline Development</u>	001036	April 23-26, 2024	24	10:30am-4:30pm ET Webinar Daily
<u>Project Risk Analysis and Management</u>	001033	April 29-May 3, 2024	28	10:30am-4:30pm ET Webinar Daily
<u>Project Management Systems and Practices</u>	001024	May 6-10, 2024	40	10:30am-4:30pm ET Webinar Daily
<u>Facilitating Conflict Resolution</u>	001558	May 14-16, 2024	24	10:30am-4:30pm ET Webinar Daily
<u>Advanced Risk Management</u>	001042	June 3-7, 2024	32	10:30am-4:30pm ET Webinar Daily
<u>Acquisition Management for Technical Personnel</u>	000145	June 4-13, 2024	16	12-4pm ET Tuesdays/Thursdays
<u>Monitoring and Controlling During Project Execution</u>	000450	June 10-14, 2024	32	10:30am-4:30pm ET Webinar Daily
<u>Federal Budgeting Process in DOE</u>	001034	June 25-28, 2024	32	10:30am-4:30pm ET Webinar Daily

SOLD OUT!

Beyond COVID: Re-Baselining Project Management **2024 DOE Project Management Workshop**

April 2-3, 2024*

Washington DC

**** Plus: Optional Half-Day Project Controls Session April 4, 2024***

If you registered for the Workshop and are not able to attend,
please let us know so we can offer your seat to those on the waitlist.

We are looking forward to seeing you all at the Workshop!

FIND UP-TO-DATE INFORMATION AND RESOURCES ANYTIME!

All PMCDP Course Descriptions and Course Materials can be found in the Course Catalog on



Save the direct link to your favorites: <https://community.connect.gov/x/UAT3Rw>



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

Have a question, 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 [Support : PARS Support \(doe.gov\)](#). The current PARS reporting schedule is located on PM-MAX at the following link: <https://community.connect.gov/x/m4IIY>

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

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

TO REACH THE PROFESSIONAL DEVELOPMENT DIVISION (PM-40) TEAM:



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Sigmond Ceaser — PMCDP Certification and Equivalency Guidelines Lead, PMCDP Curriculum and Content Manager, PMCDP Delivery Platform Advisor, Sigmond.Ceaser@hq.doe.gov



Alda Bryant — PMCDP Training Manager, FPD Certification Maintenance Lead, Alda.Bryant@hq.doe.gov

RATE YOUR EXPERIENCE WITH THE PM NEWSLETTER

Your feedback is valuable to us! Please rate your experience with this edition of the newsletter on a scale of **1 to 5** (rating of 5 stars being highly satisfied and 1 star being highly dissatisfied).



[Click here](#) to rate your experience!