DOE PROJECT MANAGEMENT NEWS

Promoting Project Management Excellence

MAY 2022

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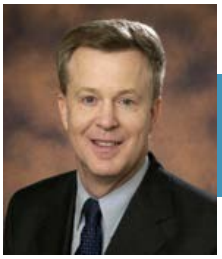


Director's Corner

"What gets measured, gets managed" is frequently attributed to Peter Drucker. However, Peter Drucker never said it. What Peter did say was, *"Unless we determine what shall be measured and what the yardstick of measurement in an area will be, the area itself will not be seen."* Fortunately, the Department does have a good project management metric to measure our progress over the years, and it does get visibility.

In response to multiple studies and reports, the Department developed a project management success metric to focus attention on and increase the visibility of its ability to successfully deliver capital asset projects. This metric, *capital asset line item construction projects will be completed at Critical Decision 4 within the original approved scope baseline and within 10 percent of the original approved cost baseline (Critical Decision 2), unless otherwise impacted by a directed change,* has served the Department well. Based on a 3-year rolling average, the Department's project management professionals have consistently delivered new and upgraded facilities and capabilities in the high-80s to low-90s (percentages) since the 2014-2016 timeframe, most recently at 93%.

For more information on the Department's project management success metric, see the article on page 2.

The adoption and implementation of best practices is a key component of building and sustaining a culture of project management excellence. DOE G 413.3-24, *Planning and Scheduling*, was recently updated and incorporates a tailored approach for applying best practices from the Government Accountability Office's (GAO) *Schedule Assessment Guide* and the National Defense Industry Association (NDIA) Integrated Program Management Division's (IPMD) *Planning & Scheduling Excellence Guide (PASEG).* The updated guide contains a wealth of information to help you plan and execute your project throughout the project lifecycle. Read more about the guide update on page 7.

Speaking of schedules, Secretary Moniz's *Project Management Policies and Principles* policy memorandum of June 8, 2015, established the requirement for projects to develop and maintain an Integrated Master Schedule (IMS) consistent with GAO's *Schedule Assessment Guide* and the NDIA's PASEG. The incorporation of operations schedule(s) within the project's IMS is necessary to ensure an IMS provides the information necessary for management to make timely, proactive decisions. Additional insight into the integration of the IMS and operations schedule is available in the article on page 4.

Continued on Page 2.

Last December, the President issued Executive Order 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability.* In April 2022, the Deputy Secretary issued a policy memorandum, *Climate Adaptation, Resilience and Sustainability in Project Management,* to update capital asset design requirements in accordance with the Executive Order and the Department's *2021 Climate Adaptation and Resilience Plan (CARP).* Learn more about the updated design requirements, applicable to all projects achieving Critical Decision (CD)-1, *Approve Alternative Selection and Cost Range,* after January 31, 2022, in the article on page 5.

Keep learning! Keep charging!

Paul Bosco

Project Success Metrics

Dave Chisenhall, Office of Project Analysis (PM-20)

Background

The Department of Energy (DOE), established in 1977 by the *DOE Organization Act*, has a rich and diverse history, tracing "its lineage to the Manhattan Project effort to develop the atomic bomb during World War II and to the various energy-related programs that previously had been dispersed throughout various Federal agencies."[1] This cabinet-level department oversees a vast mission set which relies on a complex construction and environmental remediation program where a significant number of projects are over $100 million. The blend of construction projects maintains the nuclear weapons enterprise, conducts first-of-a-kind research and development, and processes nuclear waste for safe disposal, among other programs. Additionally, there are highly technical projects that safely clean up legacy nuclear and hazardous wastes across numerous DOE sites. Combined, these projects represent some of the most technically challenging initiatives in either the public or private sector, and DOE expends billions of dollars every year on their planning, design and execution. As far back as 1982, the Government Accountability Office (GAO)—then the General Accounting Office—identified problems with DOE's cost estimating practices.[2]

Multiple GAO reports continue to highlight DOE's struggles with keeping its projects within the established performance baseline for cost, scope, and schedule. "Because of DOE's history of inadequate management and oversight," GAO has "included DOE contract and project management" on their "list of government programs at high risk for fraud, waste, abuse, and mismanagement since the list's inception in 1990."[3] This is commonly referred to as the GAO High-Risk List. Since then, several contract and project management improvements have been implemented that have effectively improved execution against DOE performance goals, resulting in positive impact on DOE's ability to consistently deliver projects against the established performance baseline.[4] While some elements of project management have been removed from the GAO High-Risk List, others still remain. DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, provides policy and direction to DOE for cradle-to-grave project management.[5] This order has undergone several revisions since inception to address multiple GAO recommendations while "[t]he Department's ultimate objective is to deliver every project at the original Performance Baseline, on schedule, within budget, and fully capable of meeting mission performance, safeguards and security, quality assurance, sustainability, and environment, safety, and health requirements."[6]

[1]United States Department of Energy, Office of Management, June 15, 2018, Energy.Gov, at https://www.energy.gov/management/office-management/operational-management/history

[2]United States Government Accountability Office (GAO), GAO/MASAD-82-37, May 26, 1982, **Further Improvements Needed in the Department of Energy for Estimating and Reporting Project Costs,** Page 2

[3] United States Government Accountability Office (GAO), GAO-10-199, January 2010, **Department of Energy Actions Needed to Develop High-Quality Cost Estimates for Construction and Environmental Cleanup Projects,** Page 2

[4] United States Department of Energy, April 2008, **Root Cause Analysis: Contract and Project Management,** Pages iii-v

[5]United States Department of Energy, Order 413.3B, April 12, 2018, **Program and Project Management for the Acquisition of Capital Assets,** Page 1

[6]United States Department of Energy, Order 413.3B, April 12, 2018, **Program and Project Management for the Acquisition of**

Continued on Page 3.

Root Cause Analysis and Corrective Action Plan

"A root cause analysis workshop was conducted in October 2007 to identify and review the systemic challenges of planning and managing DOE projects."[7] The root cause analysis formed the basis for DOE's corrective action plan as directed by *House of Representatives Report 110-185*, which accompanied the *Energy and Water Development Appropriations Bill, 2008*. The report stated the following with respect to DOE contract and project management:

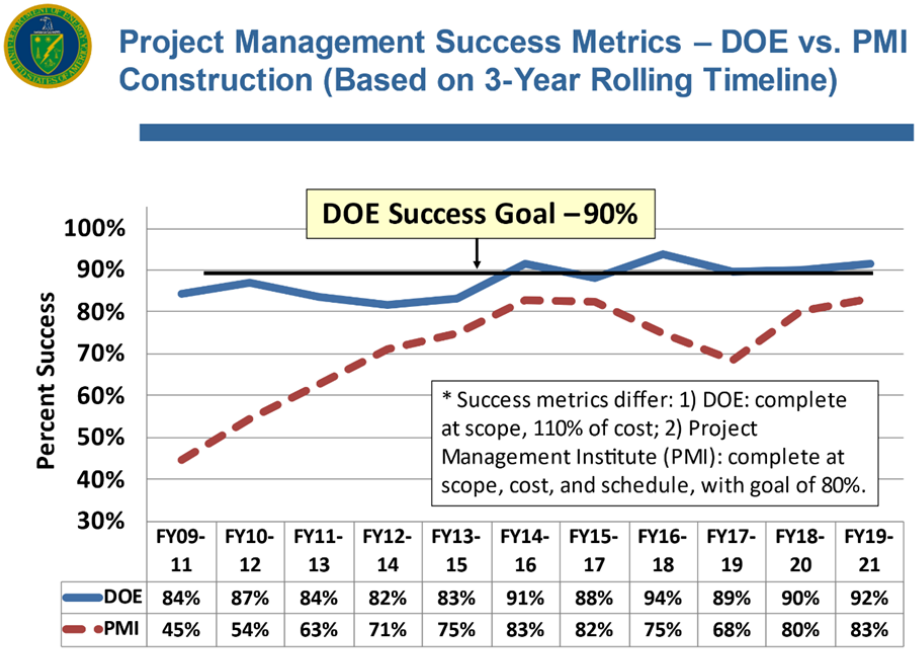
> **"The Committee directs the Department to work with GAO and develop an action plan with concrete steps and schedule milestones whose implementation will result in DOE contract management being removed from the GAO High-Risk List as soon as possible."[8]**

Prior to the root cause analysis workshop kick-off, the team performed an extensive document review to highlight recurring themes and problem areas identified in previously conducted reviews, reports, and studies of DOE contract and project management performance, to include the GAO, the National Research Council, and the DOE Inspector General.[9] To ensure the past findings were still relevant, a series of interviews were conducted with headquarters and field personnel charged with contract and project management responsibilities. Additionally, DOE project knowledgeable personnel from the Office of Management and Budget were interviewed. Generally, no new issues were identified but the continued existence of the past findings was validated.[10] The document review resulted in 143 broad issues that were refined at the workshop and categorized into a shorter list of 60 issues.

The list was then prioritized and the top-10 issues were thoroughly analyzed. This focused analytical effort explored the cause and effect relationships underlying a specific issue. It generated the accurate root cause(s) of the larger problems with contract and project management. Successful performance of DOE projects depends on professional and effective project management by the Federal Project Director (FPD). The FPD is accountable to the Project Management Executive (PME), Program Secretarial Officer or delegated authority, as appropriate, for the successful execution of the project within a Performance Baseline (PB). The Capital Asset Project performance measure for construction projects is one of the Department's key overarching metrics to assess project baseline performance. To demonstrate improved project performance, the Department will continue to measure the completion of project scope not to exceed 110% of the original approved cost baseline. The performance targets are based on a 3-year rolling average of projects reaching CD-4. Fiscal Year targets include projects reaching CD-4 in the respective subsequent 3 years. Figure 1 details recent DOE project execution metrics and the positive impact from the Department's effort to effectively mitigate most of the underlying root causes identified as responsible for the most significant issues impacting cost and schedule performance.

The Department's focus on contract and project management will endure with the goal of consistent and sustainable project success. Completing projects within the performance baseline will continue to improve as contract and project management culture moves beyond its current foundation across the DOE enterprise, and eventually be removed from the GAO High-Risk List.

Figure 1. DOE Project Execution Performance Metrics



	FY09-11	FY10-12	FY11-13	FY12-14	FY13-15	FY14-16	FY15-17	FY16-18	FY17-19	FY18-20	FY19-21
DOE	84%	87%	84%	82%	83%	91%	88%	94%	89%	90%	92%
PMI	45%	54%	63%	71%	75%	83%	82%	75%	68%	80%	83%

[7]United States Department of Energy, April 2008, **Root Cause Analysis: Contract and Project Management,** Page iv
[8]United States Department of Energy
[9]United States Department of Energy, April 2008, **Root Cause Analysis: Contract and Project Management,** Page iv
[10]United States Department of Energy, April 2008, **Root Cause Analysis: Contract and Project Management,** Page 2-1

Merging Project and Operations Schedules

Daniel Goldsmith and Matthew Taliaferro,
Office of Project Controls and Policy (PM-30)

A question arises on occasion about the necessary integration between project and operational schedules. A fully integrated and networked project schedule is critical to the success of all Department of Energy (DOE) capital asset line-item projects. For those projects with an earned value management system (EVMS) requirement, EIA-748 compliance requires an integrated, time- and resource-based schedule containing the logical network of activities that accomplish the work scope, i.e., an integrated master schedule (IMS). An EIA-748 compliant system produces current, accurate, complete, repeatable, and auditable information that can be trusted and used to make management decisions for the project, facility, and site operations.

The IMS maintains the relationship between technical (scope) achievement, cost, and schedule progress and provides visibility into the accomplishment of the contractual scope of work. The multiple subprocesses that comprise an EVMS intersect with each other and collectively contribute to the operating environment controlled by the system. EVMS subprocesses impacting the IMS include budgeting and work authorization, change control, subcontract management, and risk management, among others. A few of the more common IMS-related EVMS issues that PM-30 comes across include: lack of vertical and horizontal integration, lack of critical subcontractor integration, and inadequate integration of risk.

The IMS or project schedule is an integrated, resource-loaded, time-based schedule containing the logical network of activities required to accomplish the project scope. This baseline schedule, along with the regularly updated forecast, is the single schedule the project uses to both make decisions and report and monitor status. The IMS represents all work required to perform the scope of the project and thus provides the necessary information to synchronize the project and operations activities. An IMS is expected to be complete, realistic, and to reflect the entire scope of work including critical subcontractor efforts. A realistic schedule accounts for work calendars, the chronological order of workflow, logical activity interdependencies, duration estimates that consider resource allocation and availability, and delivery points.

Ground rules and assumptions for developing the schedule should be clearly defined and documented. The schedule should be properly updated/statused, current, and relevant. A reasonable schedule presents a feasible plan for the sequence and duration of the work.

Many projects have supplemental schedules to manage efforts. Of these supplemental schedules, an operations schedule refers to the planned use of facilities, equipment, labor resources, and materials for the purpose of providing an output, such as electricity or finished goods. Like project schedules, an operations schedule should be integrated, resource-loaded, and time-based containing the logical network of activities required to provide or produce the output. Also, like the overall project schedule, an operations schedule should be complete, realistic, and reasonable. Challenges in operations scheduling involve the management of tradeoffs among conflicting goals for the efficient utilization of labor and equipment, lead time, inventory levels, and processing times. There are numerous variables to consider when developing the schedule such as due dates, shipping dates, the types of work required, quantity and availability of resources available to accomplish the work, physical arrangement and layout of facilities and equipment, process flows, processing times, setup times, changeover times, number of shifts, downtime, and planned maintenance. All of these challenges present points of possible failure but, when integrated per the published procedures, add crucial and critical value to the overall project schedule.

The incorporation of operations schedule(s) within the project schedule is necessary for the project schedule to provide current and valid information. Without valid and accurate information, the project schedule will not be able to provide the forecasting ability management needs to make decisions in an expedient manner. Part of this integration includes having the proper touch points between the schedules, logic in the relevant areas, and ensuring these supplemental schedules are resource loaded to reflect how the work will be accomplished. The age-old phrase “garbage in – garbage out,” remains relevant and if either the supplemental schedules do not meet muster, or the overall integrated schedule does not follow approved and compliant procedures, the decisions made using these schedules may not lead to project success.

New DOE Order 413.3B Policy Memo Released on Federal Sustainability and Building Design Standards

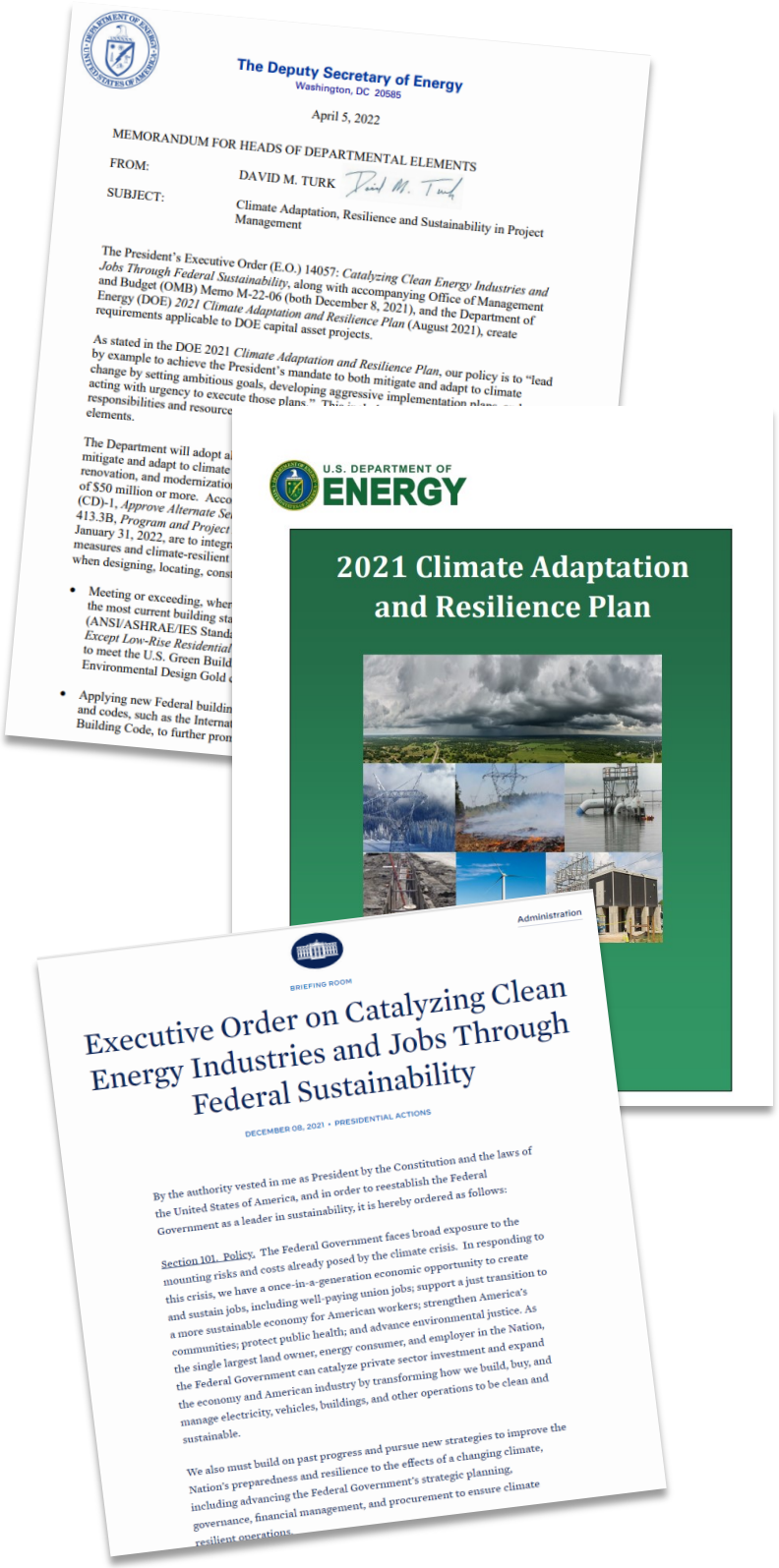
Rob Stern, Office of Project Controls and Policy (PM-30)

Department of Energy (DOE)'s capital asset design requirements were upgraded at the beginning of April with a Policy Memorandum from Deputy Secretary David Turk: *Climate Adaptation, Resilience and Sustainability in Project Management*.

The update implements DOE's 2021 *Climate Adaptation and Resilience Plan (CARP)*, which is DOE's guideline for adapting to Executive Order 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability.*

All projects achieving critical decision (CD)-1, *Approve Alternative Selection and Cost Range*, after January 31, 2022 are to "integrate energy efficient, sustainable, healthy, climate-ready measures and climate-resilient building practices into the early stages of building design when designing, locating, constructing, and renovating Federal buildings" by:

- "Meeting or exceeding, where appropriate and in conformance with 10 CFR 433, the most current building standards and codes defined by ASHRAE (ANSI/ASHRAE/IES Standard 90.1-2019 – Energy Standard for Buildings Except Low-Rise Residential Buildings) as updated and the existing requirement to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design Gold certification."
- For buildings greater than 25,000 gross square feet, the standard will be to "reduce scope 1 and 2 greenhouse gas emissions, as defined by the Federal Greenhouse Gas Accounting and Reporting Guidance, to achieve net-zero emissions by 2030, and where feasible, net-zero water and waste buildings."
- The policy memo directs that "starting at CD-1, *Approve Alternative Selection and Cost Range*, compliance with these climate adaptation, resilience, and sustainability requirements and considerations is to be documented in a separate section of the Project Execution Plan."
- The memo goes on to state "each Program Secretarial Office is responsible for measuring and reporting on activities to implement these requirements to the Department's Chief Sustainability Officer and the Sustainability Steering Committee."



Similar, but now dated, conceptual, preliminary, and final design requirements are in the current version of DOE Order 413.3B *Program and Project Management for the Acquisition of Capital Assets* referencing "Guiding Principles for Federal Leadership in High Performance and Sustainable Building provisions per EO 13693, Section 3(h), support for the Site or Strategic Sustainability Plan(s) per DOE O 436.1 and/or other sustainability considerations." DOE O 413.3B will be updated this year to revise these standards per the Policy Memo's updated requirement.

New Guide Released: DOE G 413.3-24 Planning and Scheduling

Rob Stern and Bob Loop, Office of Project Controls and Policy (PM-30)

A new Department of Energy (DOE) Guide, DOE G 413.3-24 Planning and Scheduling, was approved by the DOE Directives Review Board in April. The guide was developed by a team representing many DOE programs including both headquarters and field elements as well as representatives from Energy Facility Contractors Group (EFCOG) and then reviewed by all DOE program offices. The guide explains how to implement the integrated planning and scheduling requirements in DOE Order 413.3B Program and Project Management for the Acquisition of Capital Assets.

Both the Government Accountability Office (GAO) Schedule Assessment Guide and the National Defense Industry Association (NDIA) Integrated Program Management Division (IPMD) Planning & Scheduling Excellence Guide (PASEG) documents are referenced in the order. While both are excellent references, they were designed for broad application in Department of Defense (DOD) or civilian agencies. DOE G 413.3-24 provides tailored guidance on how to apply these references to capital asset projects subject to the DOE O 413.3B capital acquisition process in context of GAO's ten planning and scheduling best practices.

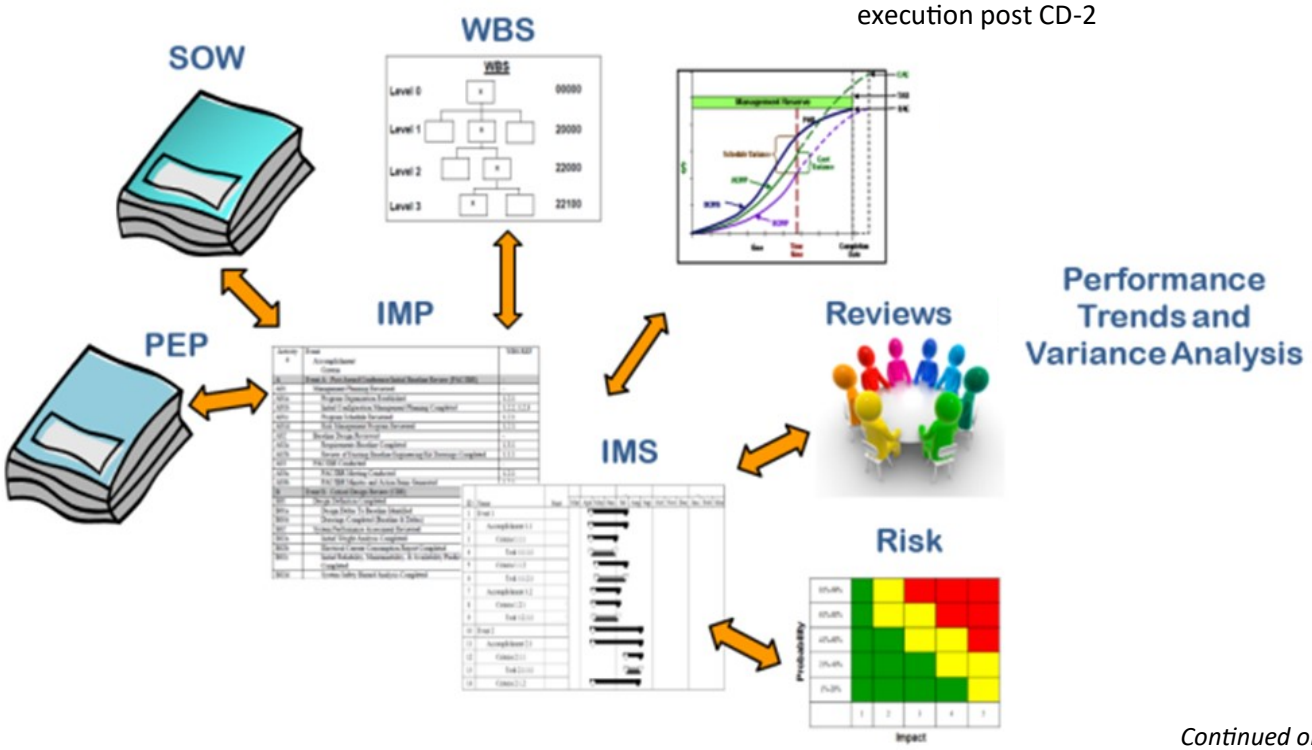
DOE G 413.3-24 explains how to conduct integrated planning and scheduling to build a project integrated master schedule (IMS) based on an integrated master plan (IMP) or similar event-based, top-level plan. Figure 1 shows how the IMP and IMS integrate with various project processes, systems, and deliverables such as the project's scope statement defined in a statement of work (SOW), project execution plan (PEP), work breakdown structure (WBS), earned value management system (EVMS), risk management, and internal and external status reviews.

DOE G 413.3-24 explains the roles and responsibilities for both the contractor and federal project staff, describes how the project's planning and scheduling processes evolve, and how the schedule fidelity grows as the project matures through the DOE O 413.3B critical decision (CD) gate process. It also explains how to plan the IMS in special circumstances.

The heart of the guide goes into considerable technical detail on the following topics:

- Scheduling contract clauses
- Planning for an IMS
- Maturation of an IMS
  - General expectations
  - Composition of the high-level master schedule prior to CD-1
  - Post CD-1 expectations for the IMS for the selected alternative
  - Baseline IMS and Forecast IMS expectations prior to CD-2
  - Baseline IMS with the construction plan of execution post CD-2

Figure 1. Relationship between the IMPs, IMS, and other project deliverables



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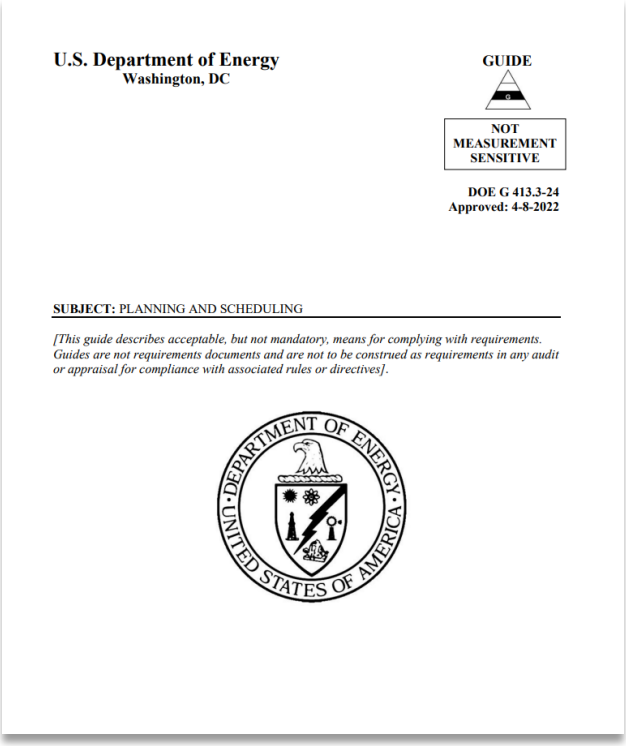
Special topics in project scheduling that are covered include:

- Integration of risk management into the schedule
- Level of effort (LOE)
- Inclusion of LOE in the IMS
- Schedule documentation and coding
- Schedule configuration options
- Desktop procedures
- Schedule margin and DOE schedule contingency in an IMS
- Subcontractor integration and management in the IMS
- Incorporation and treatment of workarounds in the IMS
- Baseline schedule updates
- Schedule Visibility Tasks and Zero Budget Activities
- Force Majeure events
- Contract versus Project
- Government Schedules



U.S. Department of Energy
Washington, DC

GUIDE

NOT MEASUREMENT SENSITIVE

DOE G 413.3-24
Approved: 4-8-2022

SUBJECT: PLANNING AND SCHEDULING

[This guide describes acceptable, but not mandatory, means for complying with requirements. Guides are not requirements documents and are not to be construed as requirements in any audit or appraisal for compliance with associated rules or directives].

The guide has schedule principles that are applicable to each project phase. This provides the rubric for contractors to develop their project schedules and be able to demonstrate quality plans and schedules during various assessments such as external independent reviews, independent cost estimates and earned value management system reviews. This should minimize findings related to the IMS and unexpected delays in the approval of project critical decisions.

While the guide's examples use Primavera P6 Software (P6), which is the most widely used scheduling tool within DOE for capital asset projects, project teams may use other scheduling software with adjustments to settings, as necessary, to achieve the same functions as demonstrated.

Congratulations to our newly certified FPDs!

Level I

Chanh Lam (NNSA)

Level II

Antonio Leonardo (NNSA)

Dennis Mayton (EM)

Fred Overbay (NNSA)

Level III

Chiu-Ming (Jerry) Kao (SC)

PLACEHOLDER FOR DOE PROJECT LEADERSHIP INSTITUTE WEBINARS

PMCDP FY22 Q3-Q4 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	LN Code	Dates	CLPs	Details
PM Systems and Practices	001024	May 16-June 13, 2022	60	(Mon/Wed) 12-4pm EST Webinar
Strategic Planning	001043	May 17-19, 2022	24	10:30am-4:30pm EST Webinar Daily
Scope Management Baseline Development	001036	May 23-26, 2022	24	10:30am-4:30pm EST Webinar Daily
Negotiation Strategies and Techniques	001047	May 24-June 2, 2022	24	(Tue/Thurs) 12-4pm EST Webinar
Acquisition Management for Technical Personnel	000145	June 21-30, 2022	24	(Tue/Thurs) 12-4pm EST Webinar
Systems Engineering	001049	July 12-14, 2022	24	10:30am-4:30pm EST Webinar Daily
Planning for Safety in PM	001035	July 12-21, 2022	28	(Tue/Thurs) 1-3pm EST Webinar
Federal Budget Process in DOE	001034	July 18-21, 2022	32	10:30am-4:30pm EST Webinar Daily
Program Management Portfolio Analysis	001025	July 25-29, 2022	40	10:30am-4:30pm EST Webinar Daily
Project Risk Analysis	001028	July 25-29, 2022	28	10:30am-4:30pm EST Webinar Daily
Facilitating Conflict Resolution	001558	August 1-10, 2022	24	(Mon/Wed) 12-4pm EST Webinar
Value Management	001027	August 2-5, 2022	24	10:30am-4:30pm EST Webinar Daily
Front-End Planning	003176	August 9-25, 2022	20	(Tue/Thurs) 12-3pm EST Webinar
Executive Communications	001031	August 23-25, 2022	24	10:30am-4:30pm EST Webinar Daily
Managing Performance-Based Contracts	001951	August 30-September 1, 2022	24	10:30am-4:30pm EST Webinar Daily
LEED For New Construction/Existing Buildings	001936	September 6-8, 2022	20	10:30am-4:30pm EST Webinar Daily
Advanced EVMS	002689	September 12-15, 2022	24	10:30am-4:30pm EST Webinar Daily
Project Management Simulation	001029	September 19-23, 2022	40	10:30am-4:30pm EST Webinar Daily
Advanced Risk Management	001042	September 26-30, 2022	32	10:30am-4:30pm EST Webinar Daily

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All PMCDP Course Descriptions and Course Materials can be found in the Course Catalog on PM-MAX
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 on PM-MAX at the following link: https://community.max.gov/x/m4lIY.

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:

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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.