EFCOG Best Practice #238

Best Practice Title: Application of Tools Based on EVMS Concepts for Projects under $50M

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Brief Description of Best Practice: The *Guide for Applying Tools Based on EVMS Concepts for Projects Under $50M* is designed for U.S. Department of Energy (DOE) cost-reimbursed projects less than $50M where a fully compliant EVMS (to EIA-748) is not required per DOE Order 413.3B, but concepts of EVMS are applicable to enable effective and efficient project controls and performance management. The guide provides an inventory of tools and rules typically used as part of a fully compliant EVMS. The ranking employed in this guide identifies key foundational tools, as well as identifying opportunities for tailoring based upon project size, complexity, or risk. The goal is to provide guidance for companies to establish enterprise level tools that provide an effective framework for planning and managing a project and providing meaningful performance data as efficiently as possible.

Why the Best Practice was used: This guide was developed to identify high value EVMS concepts and tools that can be applied or customized for smaller projects as these projects do not require full EVMS compliance but benefit from many concepts and tools available in it.

What are the benefits of the best practice: This guide provides a roadmap for a company to select and tailor EVMS concepts and tools for a project portfolio based on size, complexity and risk, which leads to effective and appropriate planning and management techniques, and meaningful and consistent retrieval of performance data.

What problems/issues were associated with the best practice: None identified.

How the success of the Best Practice was measured: Development and implementation of tailored EVMS tools for smaller projects provide meaningful and consistent performance data.

Description of process experience using the best practice: Process experiences are shown in the tailoring comments and have been incorporated throughout the guide.

Guide for Applying Tools Based on EVMS Concepts for Projects under $50M

Scope / Purpose

This guide is designed for U.S. Department of Energy (DOE) cost-reimbursed projects less than $50M where full Earned Value Management System (EVMS) is not required per DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, but is applicable to all projects below a mandated compliant EVMS system requirement. It requires the reader to have a good understanding of EVMS requirements as typically implemented in an approved system. To obtain a general background of EVMS, a good source is National Defense Industrial Association's (NDIA) *NDIA EVMS Guideline Scalability Guide*, which provides details and context behind each of the 32 EIA-748 EVMS guidelines. The NDIA guide explains each guideline, the benefit to project management, typical products, and a brief discussion of "scalability". This guide is not intended to duplicate the foundation provided by NDIA, but should be used by companies to evaluate standard tools used for project management and during project setup to evaluate which EVMS concepts would provide the most value based on the project's size of the risk.

Organization of Guide

The guide identifies specific EVMS concepts related to project management and will reference the tailoring matrix (Appendix A), which organizes EVMS concepts by process group (Appendix B). The tailoring matrix includes the following columns used to evaluate each concept and provide a guide for how to apply the tool:

A. **Group**: Key or Tailor. Concepts flagged as Key are considered foundational to EVMS and should be incorporated in some fashion. Concepts defined as Tailor are requirements typically associated with a fully compliant EVMS that have the most opportunity for adjustment or based upon project size and risk.
B. **Item**: Sequence number for concept.
C. **EVMS Primary Process Group:** Main group that applies to the concept. See Attribute process map grouping (Appendix B) for details. Process grouping for EVMS guidelines and associated attributes follow DOE instructions. For example, organizing includes Guidelines 1, 2, 3 and 5 in the primary process group.
D. **EVMS Secondary Process Group:** Secondary group that applies to the concept. See Attribute process map grouping for details. Process grouping for EVMS guidelines and associated attributes follow DOE instructions. For example, organizing includes Guidelines 9, 10, 17, 28 and 26 as a secondary process group with associated attributes.
E. **EVMS Concept:** Describes the tool or requirement typically associated with a fully compliant EVMS.
F. **Tailoring Comments:** Provides context to the value of the concept in relation to the effort needed to implement and maintain. Also provides recommendations on potential tailoring.
G. **Project less than $10M with Low Consequence:** Considered a minimum threshold to implement this EVMS concept. While a low end dollar value was not defined, most projects

where these tools would provide meaningful value for the expense would be at the higher end of this range.

H. **Project between $10M and $50M with low risk:** Typically an intermediate rank of the concept applicability. An assessment of both dollar value and risk, where execution risk and potential impact of performance issues are lower compared to other projects of similar size.

I. **Project between $10M and $50M with higher risk:** Typically the highest rank for the concept as the threshold approaches full EVMS requirements. Both dollar value and risk is considered, where execution risk and potential impact of performance issues are on the high side compared to other projects of similar size.

Concept Scores in Columns G, H & I are defined by a rank of 1 to 5:

1. **Minimal Value** – None of the concepts ranked at a 1 indicating there was at least some value for all concepts.
2. **Some Value** – Significant opportunity to limit or skip this concept due to complexity or expense to implement or maintain.
3. **Meaningful** – Concept provides value, but may require significant effort. Consider the benefit and expense when tailoring.
4. **Important** – This category may include Key concepts, but adjustment of approach may be warranted based upon the project or category.
5. **Critical** – Highest rank indicating the intent of this concept should be incorporated into the management tool in some fashion for all projects in this category.

How and When to Apply

While each of the EVMS concepts include a ranking (1 to 5), the ranking should only be used as a guide. The decision to fully or partially implement a concept should be based on the type of project and existing management infrastructure that may impact the potential return on the investment to implement a new requirement. A preferred suite of tools/requirements should be reviewed in relation to the skill level of existing staff. Any skills gaps would require a training program to achieve consistent results.

Implementing the selected tools at project startup is recommended as the foundational requirements may require structural changes, such as the project schedule, Work Breakdown Structure (WBS) or definition of earnings techniques. Note that contracts less than $10M will have diminishing returns on requirements especially for projects less than $1M. The concept scores are not intended to apply consistently for projects substantially less than the $10M group threshold. For those smaller projects, look first at the concepts defined as Key in column A as the most likely candidates to pursue in your management system.

While this guide is targeted at cost reimbursed projects, EVMS concepts have value for higher dollar value fixed-price equipment and subcontracts. Note that the award value and initial budget for these major fixed-price contracts should be equal at the start of work. EVMS concepts related to schedule monitoring, change management, and risk management (Contingency, Management Reserve, and Schedule Margin, etc.) will still play a role in project management. Consequently, the design and implementation of the performance measurement system for larger fixed-price suppliers should facilitate reporting of schedule and technical progress that can be integrated into an enterprise reporting system.

Key "Foundational" Concepts

Evaluation of the detailed concepts identified a group of foundational concepts that should be considered in some form regardless of project size/risk. These concepts along with the associated benefit are:

- Define WBS – All projects should define their scope in a unique product-based WBS. This scope definition process is needed to describe the scope and organize it in a way that facilitates management analysis.
- Group scope into Work Packages (WP) and Planning Packages (PP) – Even if only 1 Control Account (CA) is needed, organization of scope with a defined earned value technique [discrete or level of effort (LOE)] provides the structure to identify meaningful variances.
- Schedule – Defining both a baseline and forecast schedule for the defined scope provides a tool for comparison to analyze schedule performance. Several aspects of the schedule are needed to enable it for EVM purposes, including: resource loading, intelligently time phasing of the budget, and appropriate schedule logic.
- Work Authorization – While there may be differing levels of formality, all work must be defined and authorized by the proper entity to reduce the potential for scope creep.
- Accounting – At a minimum, labor hours and dollars should be budgeted and tracked to provide for basic elements of cost analysis.
- Estimate at Completion (EAC) – On a monthly basis, the remaining scope should be evaluated based upon performance of existing scope and known changes to deliver a meaningful EAC.
- Changes – While there is a broad spectrum of potential rules for change control, all projects should have a process to incorporate a change in scope or replanning of existing scope. Changes must reconcile project scope and budget as they are incorporated.
- Training – No suite of tools will be successful without a defined training and assessment program to assist compliance.

Tailorable Concepts

A number of requirements typically associated with a fully compliant EVMS have varying degrees of benefit for cost-reimbursed projects of less than $50M. These are the areas any project team should review to gain the most value for tailoring. Discussion of tailoring is organized by an EVMS process group:

1. **Organizing**
    a. Defining a WBS and organization of scope at the Work Package and Planning Package level is foundational. For smaller projects, it may be appropriate to use a single Control Account if the scope and management organization is narrow enough to have a single reporting element. Note that if there is a significant amount of LOE scope, it is advisable to segregate the LOE scope into a separate control account to avoid masking the discrete scope.
    b. Defining scope into a WBS Dictionary is a best practice to identify budgeted scope that will reduce the potential for scope creep. For projects that are narrowly defined or where the scope definition is adequately defined in another document, a WBS Dictionary may by unnecessary or redundant.

c. If a WBS Dictionary is used, maintaining it under configuration control may not provide much benefit if changes are minimal and scope is well understood by the team. Effort on a quality project schedule with activities that have clear entry/exit criteria may be adequate as long as it is under configuration control.

2. Planning & Scheduling

a. Utilizing a project schedule that translates scope into actions (resource loaded), organized with a WBS, and time phased is foundational to effective project management and recommended for all projects. A schedule that is fully compliant with a certified system will include many concepts that have varying benefit for projects less than $50M.

b. Full Time phasing of budget may not add value for shorter (under a year) and smaller (less than $10M) projects where measurement of progress is more critical than time phasing. The schedule should reflect activities on the critical path.

c. The ability of a schedule to pass a push/pull test provides a measure of confidence in the logic and appropriate use of constraints. Quality logic is beneficial for all projects but may be less critical for shorter projects where a simpler schedule is understood by the project team. While hard constraints should be avoided, use of constraints and logic type other than "finish to start" may be efficient and effective for management. Note that in terms of practicality, it is difficult to conduct the push/pull test if scheduling software is not used.

d. Loading the full budget into the schedule is always recommended, which will define the performance measurement baseline (PMB). Limiting non-resource loaded activities to Schedule Visibility Tasks (SVTs) for non-project direct scope or the selected use of Zero Budgeted Activities (ZBAs) is part of a certified system. While ZBAs may be restricted to specific tasks related to procurement for a certified system, flexibility to add additional ZBAs for additional management visibility may provide benefit for smaller projects. While non-resource loaded activity will not contribute to earned value, the budget for the non-resource loaded tasks must still be captured and earned in summary level activities. This approach simplifies the schedule development process and allows the project schedule to be more flexible to project management.

e. Rigor on mandating short duration activities (less than 44 work days) or requiring Quantifiable Backup Data (QBD) may have less value for lower risk projects less than those of at least two years in duration. Use of long activities on a short overall schedule make it difficult to appreciate the true status of the activity, and caution is advised for discrete work. Higher risk or critical path activities should have short, expressive activities that allow for accurate measurement of progress and early identification of schedule issues. Providing this same level of rigor to lower risk projects or elements of larger projects that have minimal risk may not be necessary. An examination of scope and risk should be done to determine the needed level of rigor.

f. Time phasing the budget by using a resource-loaded project schedule may not be necessary for projects less than $10M with durations less than a year. The main goal is to capture the scope/budget and measure progress. Reflecting the schedule through the use

of a worksheet or another method less costly than using scheduling software with trained planners may be effective.

g. Early dates from the baseline schedule typically form the basis for measurement in a fully compliant schedule, which requires significant effort to examine activities, duration and logic, including the use of soft constraints to deliver a baseline profile that is reasonable and achievable. Reducing the rigor, or potentially using a baseline that defines activity start (other than early start) when there is schedule float, may be an acceptable and efficient approach to establishing the PMB.

h. Rigor behind documenting percent complete recorded in the current schedule has evolved as a strong requirement of a fully compliant EVMS. Maintaining QBD and auditable records is a process step that may not be value added for smaller projects. All activities should have an earnings basis (e.g., quantity complete, milestone). Percent complete should still be based on that plan but need not follow the documentation rigor as long as any errors would not materially misstate the earned value data.

3. Budgeting & Work Authorization

a. The budgeting and work authorization process group requires alignment of scope, schedule and budget, which is meaningful to all projects. In addition, all projects must follow basic contractual steps to define when work is authorized to start. Tailoring applies to requirements for timing and definition of specific elements of cost.

b. Smaller projects typically have a simpler WBS. In most cases, restricting work packages to being LOE or Discrete is advisable in nearly all cases. Some rigor to require it in all cases may not be necessary if suitable performance data can be obtained.

c. Span of control for a control account manager (CAM) may not even apply for a smaller project as it may be acceptable to have a single control account or have the project manager (PM) act as the CAM. As projects grow with multiple CAMs, the ability for that CAM to manage the scope assigned should be assessed.

d. Defining a clear organizational breakdown (outside the WBS) is meaningful when this type of analysis cannot be achieved through a work package or control account level analysis. Smaller projects with a simpler WBS that allows assessment of organizational performance may not need to follow stricter EVMS organizational breakdown structure (OBS) requirements. For example, it may be acceptable to group performance by labor and non-labor relying upon the WBS for analysis.

e. Defining a control account plan adds value to communicate scope and budget. For smaller projects this step may not be necessary if the scope is defined in the schedule. With shorter duration projects all scope could be loaded into work packages up front to reduce future change control steps.

f. Rigorous controls on defining and controlling changes on earned value techniques is required for a fully compliant EVMS. In any system, the method of earning should be meaningful and adequate for measurement. When methods are subjective, the value of performance data may become less meaningful. When possible, the defined earning method for activities should be clear and objective. Rigor to this rule may not be

necessary in every case depending up on the scope and risk of the work.

4. Accounting Considerations

a. Actual cost related to earned value is possible through the use of an approved accounting system and supplemental use of estimated actuals when the accounting costs do not fully reflect the actual cost of work performed (ACWP). Without adequate ACWP, period and cumulative cost variance may be materially misstated.

b. At the start of a project, the process of when ACWP is reported should be examined for all significant cost elements. For example, if labor is the primary Element of Cost (EOC) and accounting records are current each period, a supplemental system of estimated actuals may not add value. If, however, there is a major piece of subcontract scope and invoiced cost may not be reflected in the month earned value is claimed, there must be a method to accrue this cost or provide an estimated actual. The decision process will become more important for scope with higher performance risk.

c. The ability to define performance by EOC (e.g., labor, subcontracts, material, equipment) is part of the organization process group. In accounting, the need for EOC visibility diminishes with simpler projects. At a minimum, the accounting system should be able to organizing labor versus non-labor costs. Beyond that, EOC detail would be based on the project size, complexity, and risk.

5. Indirect Cost Management

a. Depending on accounting practices, indirect costs may be a significant driver of project cost. Since indirect variances are rarely controlled by the project CAM, there should always be a method to understand and describe any significant variances. Controls placed on indirect managers should increase as the percentage of indirect budgets grow.

6. Analysis & Management Reporting

a. Requirements for analysis and reporting have significant opportunities for tailoring. The foundational concept of defining variances, analyzing them and acting on them should be present in any management system. EVMS rules tend to restrict flexibility in an attempt to provide a consistent quality product.

b. Training in the tools is necessary for any management system. The complexity of the tools and the amount of time spent training and coaching will be less for tailored systems.

c. Reporting thresholds should be defined but may not require the same amount of analysis as a fully compliant system. Examining only cumulative variances may be acceptable. Depending up on the importance of the project, a single control account or even project level reporting may be adequate.

d. Creating variance analysis reports (VARs) that are complete, concise, and actionable is a recurring opportunity for improvement in most compliant systems. The effort placed on this analysis, as well as routinely training and coaching of the team, provides benefit. Simplifying the requirements will reduce the effort and simplify oversight.

e. The requirement to maintain a separate VAR action tracking system may be reduced.

Defining actions and working them to closure is necessary. Maintaining a separate process may not be value added if the project uses an existing action tracking process.

f. Updating the EAC on a monthly basis adds value for active projects. Defining changes early through a trend process and using an active risk program provides necessary input for a meaningful EAC. If a regularly updated and current forecast schedule is used to manage the project, the EAC should be defined as ACWP plus the Estimate to Complete (ETC) from the forecast schedule, plus undistributed budget (UB). Tailoring of EAC would be the elimination of the annual comprehensive EAC as lower dollar value projects are typically short and not as susceptible to fluctuations as larger projects.

7. Change Control

a. A fully compliant EVMS uses a change control process where any change to the baseline follows a strict set of rules and approvals. Rules associated with changes are designed to verify proper use of management reserve (MR) and encourage proactive planning. While these rules have merit for high dollar value projects with significant risk, smaller project may employ a process that allows for more flexibility on the use of MR and approval of changes to the baseline.

b. Good planning is typically achieved through a rolling wave using a six-month planning horizon. With shorter projects, it may be possible to detail plan the entire effort and eliminate the need for rolling wave planning.

c. Maintaining a strict association between budget and scope is foundational to EVMS. Tailoring opportunities exist for the definition of scope and use of MR based on the business practices of the company. Note that if potential use of MR is expanded, the initial value of MR must be sufficient to cover the expected need.

d. Methods to establish MR using a cost and schedule risk model may not be required if the project is well defined. It may be acceptable to use MR guidelines as a percentage of the current estimate.

e. Rules on retroactive changes, freeze period changes, and clearing variances typically require government approval for fully compliant systems. Unless the project has a contractual requirement, the rules on these type of changes may be modified. Recommended changes still follow an approval cycle above the PM, perhaps a senior manager above the PM.

8. Material Management

a. Fully compliant systems require earned value be taken upon delivery with associated actual cost. This basic requirement should remain, although the rigor may be adjusted based on the value of materials and the potential an error would materially misstate performance data.

b. Use of High Dollar Value (HDV) rules to fully integrate the cost and schedule data for major suppliers should be considered if materials are a significant portion of the scope. Rigor on alignment rules may be adjusted based upon standard business practices.

9. **Subcontract Management**
    a. Similar to Material management, major subcontractors should also follow HDV alignment with vertical and horizontal subcontract alignment. Normally the extent of alignment is risk based and inclusion of the higher risk subcontracts on an HDV list. An alternative to this rigor is to allow a one-time true up based on the awarded contract value for subcontracts rather than maintain an HDV list. This simplifies implementation and provides additional flexibility for use of MR to limit the variances as a result of the award value while providing performance variances post award.
    b. There are opportunities to use EVMS change control tools in coordination with the trend process to improve baseline control and the quality of the EAC, although the extent of rigor on change control should also be based on how the performance data will be used and the execution risk.

10. **Risk Management**
    a. A fully integrated EVMS regularly assesses risks, identifies mitigation plans and tracks progress. Smaller projects may not require the same level of rigor, although risk identification and management should remain a fundamental expectation for project management.
    b. Tailoring of the risk program may involve a less formal approach with a smaller group. Specific risk management software may not be necessary as long as significant risks are being tracked and considered as part of the EAC.

Conclusion

All projects benefit from foundational EVMS concepts and tailoring options that include:

- Maintaining scope in a WBS and organizing it into Work Packages providing the structure as needed to track progress.
- Defining time-phased budget adequately to establish a PMB.
- Using a logic-driven schedule (gold standard) may not be necessary in every case. Tailoring opportunities include using a worksheet rather than a logic-driven schedule.
- Coding actual cost and formality of reporting may be simplified based upon limiting Organizational Breakdown, as long as needed focus remains on the WBS.
- Defining periodic EAC analysis is core project management expectation; however, execution risk should drive the tool and level of rigor.
- Maintaining change management, easing rules regarding the use of MR. Note that the project must be motivated to have forward planning, creating stability in the baseline needed to deliver meaningful variances.
- Establishing core tools, limiting variations, will allow procedures and training to be better understood with improved compliance.
- Defining a consistent level of rigor will allow a company to report a portfolio of projects that benefit from performance data organized within a corporate WBS. Better performance data with meaningful monthly EACs will improve the company's ability to predict staffing needs and more efficiently utilize available funding.

Appendix A – Tailoring Matrix

Tailoring EVMS Concepts for Smaller Projects (<$50M) **Group: Key = Foundational concept; Variable = Optional use, tailored approach** **Concept Significance: 5 = Critical, 4 = Important, 3 = Meaningful, 2 = Some value, 1 = Minimal value**						**Concept Significance Score**		
Group Key* or Tailor	**Item**	**EVMS Primary Group (10)**	**EVMS Secondary Group (10)**	**EVMS Concept (requirement of fully compliant EVMS)**	**Tailoring comments**	**<$10M Low Consequence**	**$10-50M Lower Risk**	**$10-50M Higher Risk**
Key	1	01. Organizing	03. Budgeting & Work Authorization	Define product based WBS.	Foundational. Project size and risk will guide complexity.	5	5	5
Key	2	01. Organizing	03. Budgeting & Work Authorization	Scope divided into Control Accounts (CA).	Foundational. Small project may have only 1 or 2 CA based on project structure. CA should be the reporting level	5	5	5
Key	3	01. Organizing	02. Planning & Scheduling	Scope subdivided into lower level. Work Package (WP) and Planning Package (PP) level	Foundational. Even small projects with 1 Control Account benefit from organization of scope into WP and PPs. For organizations planning to roll up projects into an enterprise report, a clear and unique WBS with CA, PP, and WP levels provides good structure for enterprise level reporting.	5	5	5
Tailor	4	01. Organizing	03. Budgeting & Work Authorization	Scope defined in WBS Dictionary (WBS-D).	Best Practice. No matter how small a project is, it is a best practice to breakdown the scope and maintain through change control.	4	4	5
Tailor	5	01. Organizing	03. Budgeting & Work Authorization	Require the WBS-D be configuration controlled.	Tailorable. Most value for higher risk projects >$10M. If scope is clear and scope creep is unlikely, modifying the WBS-D with baseline changes adds limited value for the administrative cost. In all cases, the schedule must clearly reflect scope to be performed.	2	3	5
Key	6	02. Planning & Scheduling	06. Analysis & Management Reporting	Project must use a logic-driven schedule.	Foundational. Loading budget on Milestones alone if the project is mainly a single piece of equipment and you have a FP contract with the supplier and minimal labor.	4	5	5
Key	7	02. Planning & Scheduling	07. Change Control	Project must a project have both a baseline and forecast schedule.	Foundational. Time-phased distribution of baseline required (potentially outside a schedule). For short duration projects <6 months probably not for the <$10M projects.	4	5	5
Key	8	02. Planning & Scheduling	03. Budgeting & Work Authorization	Schedule must be resource loaded.	Foundational. Flexibility may apply for small projects with few resources.	4	5	5
Key	9	02. Planning & Scheduling	03. Budgeting & Work Authorization	Schedule must reflect the full-time phased budget.	Time-phased budget is foundational. For shorter projects < $10M, that time phased budget may be maintained outside the schedule; however, the integration benefit of having the data in the schedule will be lost. Changes in schedule must still be reflected in time phased budget.	4	5	5

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Key	10	02. Planning & Scheduling	06. Analysis & Management Reporting	All activities must have a predecessor and successor.	Foundational. Basic schedule logic is required for meaningful schedule analysis.	4	5	5
Tailor	11	02. Planning & Scheduling	10. Risk Management	Schedule must pass a push/pull test.	Best Practice. Use of appropriate logic is meaningful for all projects. Rigor is critical for larger, more complex projects where schedule analysis is more difficult.	3	5	5
Tailor	12	02. Planning & Scheduling	03. Budgeting & Work Authorization	All schedule activities resource loaded except SVTs.	Best Practice. Allow based on risk / materiality impact. PM/CAM can customize schedule with non-resource loaded activities as long as the activities are used to add context to existing resource loaded activities and are kept to a minimum.	3	4	5
Tailor	13	02. Planning & Scheduling	03. Budgeting & Work Authorization	Schedule must follow EVMS compliant guidelines on activity duration or relationships.	Best Practice. Note that shorter projects have less risk from poor planning. Projects duration over two years may be a good use for this as a requirement. This includes limiting use of hard constraints.	3	4	5
Tailor	14	02. Planning & Scheduling	03. Budgeting & Work Authorization	Time phased BCWS based on logically tied resource loaded schedule.	Best practice to demonstrate EVMS baseline integration, and should be a requirement for projects > $10M with higher risk. Excel worksheet for small projects can mimic a schedule to satisfy a time-phased baseline. In all cases, logic should be considered when defining a baseline that provides a PMB that is achievable and consistent with how earnings will be taken.	2	4	5
Tailor	15	02. Planning & Scheduling	03. Budgeting & Work Authorization	Baseline schedule reflect early dates, with schedule margin/ reserve placed at the end (prior to CD-4).	It depends on the nature of the work, best practice is most likely based on schedule risk analysis. While a fully compliant EVMS may place schedule margin at the end of the schedule network (prior to completion milestone), it may be beneficial to assign schedule margin throughout the project where risk is expected, not at the end. This practice can deliver a meaningful PMB for lower risk projects when disciplined replanting change control is not followed. If a schedule is used, soft constraints should be used for resource leveling in the baseline.	2	4	5

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Tailor	16	02. Planning & Scheduling	04. Accounting Considerations	BCWP (EV) comes from a resource-loaded schedule.	Reflecting physical percent complete on a resource-loaded schedule is a foundational EVMS concept; however, this requires the use of a resource-loaded schedule and cost processor. For smaller projects, it may be acceptable to use a simpler worksheet for tracking BCWS, BCWP, and ACWP as long as the potential for error does not risk materially misstating the project performance. In all cases, EV must have a basis and should be from the schedule if a resource loaded schedule is used. If longer activities (> 44 work days) are used, well understood QBD should reflect earned value.	3	5	5
Tailor	17	02. Planning & Scheduling	06. Analysis & Management Reporting	Schedule status must have an EVMS compliant basis.	If a schedule is used for status, the activity must have clear exit criteria. If long duration (> 44 work days) QBD should document the work. Quantities completed (compared to EAC) to define percent complete is an example. Tool depends upon units of measure; this could be daily reports that capture work completed, spreadsheets signed by superintendents documenting quantities completed, delivery receipts for materials.	3	4	5
Tailor	18	03. Budgeting & Work Authorization	02. Planning & Scheduling	WP and PPs must be 100% Discrete or LOE.	Best Practice. Some flexibility on small projects <$10M, but effective analysis can only be achieved by segregating LOE and Discrete scope.	4	5	5
Tailor	19	03. Budgeting & Work Authorization	01. Organizing	Restrict CAM scope (span of control) based upon size or duration of CA.	Most value for higher risk projects >$10M. Small projects may have PM functioning as the only CAM.	2	3	4
Tailor	20	03. Budgeting & Work Authorization	01. Organizing	Apply EVMS for Fixed Price scope.	Most value for higher risk projects >$10M. Risk and duration are driver for enhanced reporting requirements.	2	3	4
Tailor	21	03. Budgeting & Work Authorization	01. Organizing	Project should have both a PM and CAM.	Optional. Number of CAMs should be determined based on span of control and expertise. PM can be the CAM on a small project. Consider complexity in the decision. In cases where PM in the CAM, use Project Controls as second set of eyes.	3	4	5

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Tailor	22	03. Budgeting & Work Authorization	01. Organizing	BCWS defines budget by both OBS and WBS. If OBS defined, resource groups should be defined.	Optional. This requirement is based on the need to create a RAM and Format 2. On smaller projects, this may not be necessary. If OBS is identified, grouping cost by Labor and Non-labor may be adequate on small projects. Labor grouping has significance for enterprise reporting.	3	4	5
Key	23	03. Budgeting & Work Authorization	01. Organizing	Project follows a formal work authorization process to start work.	Foundational on government projects. In no cases should work begin without proper authorization. Documentation must be maintained.	5	5	5
Key	24	03. Budgeting & Work Authorization	07. Change Control	Documentation needed to authorize changes.	Foundational on government projects. AUW changes must be tracked. Documentation may be internal from PM on smaller projects.	5	5	5
Tailor	25	03. Budgeting & Work Authorization	01. Organizing	Formal Control Account Plan defining scope, budget, PPs and WPs.	Scope should be defined and associated with budget. A one-page CAP for a CA may be adequate to show this association.	3	5	5
Tailor	26	03. Budgeting & Work Authorization	02. Planning & Scheduling	Project has a time-phased baseline that aligns with the way work will be earned.	Foundational for meaningful EVMS; however, rigorous time phasing may not be as valuable for project with duration less than six months. When using the schedule software to distribute BCWS, care must always be given to consider at what point earnings will be taken.	3	5	5
Tailor	27	03. Budgeting & Work Authorization	02. Planning & Scheduling	Activities longer than 44 work days must maintain auditable QBD supporting schedule status.	For higher risk projects, defining the QBD to be used for earned value in advance as well as maintaining configuration control for this method adds significant value. As long as the activity is clear with entry and exit criteria, smaller projects may allow broader use of percent complete for activities > 44d without maintaining QBD for audit purposes.	3	4	5
Tailor	28	03. Budgeting & Work Authorization	03. Budgeting & Work Authorization	Changes to Work Package EV technique strictly controlled.	EVMS Work Packages define scope that is well understood and ready to work. Rigid change control adds credibility, and incentivizes planning ahead. For smaller projects, the selected EV technique should be documented as a code in the schedule for visibility.	2	3	4
Key	29	03. Budgeting & Work Authorization	01. Organizing	LOE used only where discrete is impractical or the scope is supportive in nature.	Foundational, regardless of size of project. Discrete work needed to measure and use EVMS.	4	5	5

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Group Key* or Tailor	**Item**	**EVMS Primary Group (10)**	**EVMS Secondary Group (10)**	**EVMS Concept (requirement of fully compliant EVMS)**	**Tailoring comments**	**<$10M Low Consequence**	**$10-50M Lower Risk**	**$10-50M Higher Risk**
Key	30	04. Accounting Considerations	06. Analysis & Management Reporting	Track Labor hours.	Foundational. Even with few work packages and charge codes, understanding performance in both hours and dollars is typically available and meaningful for analysis.	5	5	5
Tailor	31	04. Accounting Considerations	06. Analysis & Management Reporting	ACWP must reconcile to Accounting values (including accruals), with difference being estimated actuals.	For a meaningful cost variance, ACWP must be reflected when BCWP (Earned Value) is taken. Since EVMS is a management tool, there should there be a threshold for materiality of differences based upon the size, duration, and risk of the project. Compliance may require use of a cost processor if the project has higher execution risk. For low risk projects (not using a cost processor), it may be acceptable to allow ACWP errors to be changed outside the system if documented. Estimated actuals may be used only if the process and requirements are well understood.	3	4	5
Tailor	32	04. Accounting Considerations	06. Analysis & Management Reporting	Track performance by EOC: Labor, SC, ODC and Matl/Equip.	Capital projects added value. Track only EOC categories that apply. Analyze if EOC required before tracking	2	3	5
Key	33	05. Indirect Cost Management	06. Analysis & Management Reporting	Are indirect budgets visible to projects: controlled and communicated in a way to avoid unexpected impact to project?	Risk based: depending on company complexity. Are indirect captured and managed in the proper groupings? Process to manage indirect pools clear. Visibility to insure accurate indirect costs. Apply if indirect budgets control have higher percentage.	4	4	5
Key	34	06. Analysis & Management Reporting	01. Organizing	Train part-time CAMs/PM in EVMS basics.	Foundational. For organizations planning to roll up projects into an enterprise report, leaders involved in feeding the performance reporting tools must understand the basic concepts even if not a full time CAM. Duration and extent of training may be tailored based upon project requirements.	4	5	5
Tailor	35	06. Analysis & Management Reporting	01. Organizing	Monthly cost and schedule variances reported at the CA level and project level.	All projects should have a summary report, no threshold. For smaller projects <$10M, reporting at project level is OK. $10M to $50M projects should be large enough to define a WBS where control accounts are meaningful.	3	5	5

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Tailor	36	06. Analysis & Management Reporting	06. Analysis & Management Reporting	Project reporting thresholds be defined.	Projects >$10M should have a report summary and selected CA variances exceeding defined thresholds are discussed. Direction should include awareness of potential masking of significant variances below the CA level, which should be identified.	3	4	5
Tailor	37	06. Analysis & Management Reporting	06. Analysis & Management Reporting	CA VARs include Cause, Impact, and Action sections.	Using a standard format, a best practice, even if used only at the project level. Action section may be overall.	3	4	5
Tailor	38	06. Analysis & Management Reporting	06. Analysis & Management Reporting	VAR content standards for each section.	Use of a VAR quality checklist or style guide provides consistency of analysis needed for larger projects. If small projects <$10M are rolled up, these standards would add value to enterprise reporting.	2	4	5
Tailor	39	06. Analysis & Management Reporting	02. Planning & Scheduling	VAR requirements include action tracking related to significant variances.	All projects benefit from defined management actions and associated tracking to closure. Tying this to the VAR is more beneficial for projects >$10M.	2	4	5
Key	40	06. Analysis & Management Reporting	10. Risk Management	Project updates the EAC monthly (No annual Comprehensive EAC).	Foundational. In most cases, the frequency of monthly updates provide adequate visibility of change. Projects should also use a trend program where scope changes are identified early. If the small project is long duration and low risk, EAC may be quarterly.	5	5	5
Tailor	41	06. Analysis & Management Reporting	02. Planning & Scheduling	EAC equals ACWP plus the ETC from the resource-loaded schedule.	Required if resource-loaded schedule is used. Smaller projects <$10M may use a worksheet.	3	5	5
Tailor	42	07. Change Control	02. Planning & Scheduling	Project follows a rolling wave approach to planning converting Planning Packages to Work Packages.	Use of planning packages and rolling wave planning is a best practice for projects greater than a year in duration. For shorter duration projects, all scope should be planned in work packages. Caution, scope placed in work packages must reflect adequate planning for work to begin. If not, planning packages should be used and must be converted to work packages before work is scheduled to begin.	2	4	5

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Tailor	43	07. Change Control	03. Budgeting & Work Authorization	Projects follows EVMS requirements for identification of changes.	Aligning Budget with Scope is a foundational principle. At a minimum, changes should be categorized as Performance or Scope. To reduce the potential for scope creep, the PM must authorize new scope before it starts. Formality of trend process may be tailored based upon project risk.	3	4	5
Tailor	44	07. Change Control	03. Budgeting & Work Authorization	Revisions to the baseline follow a formal process.	While rules on timing of changes may be tailored, the PM should formally approve any changes with a record of the impact when MR is used. If there are CAMs, they should also sign the change.	3	4	5
Tailor	45	07. Change Control	10. Risk Management	Budget for MR defined at the beginning of the project.	MR is a foundational concept if a project has risks that may require additional scope. Smaller projects may not have significant risks but the assessment of risk should be made.	3	4	5
Tailor	46	07. Change Control	10. Risk Management	There are restrictions on use of MR.	If there is MR, there should be rules for using it. MR should never be used for performance, but the rules may be tailored.	3	4	5
Key	47	07. Change Control	06. Analysis & Management Reporting	Project must follow OTB/OTS rules if baseline is inadequate.	Foundational for government contracts. OTB or overrun to estimate may be less formal and depends upon contract requirements.	4	5	5
Tailor	48	07. Change Control	06. Analysis & Management Reporting	Rules for retroactive changes including reflecting as a point adjustment in the current period.	While not as significant as resetting variances, changing the plan for previous periods should be controlled with higher risk projects. Reflecting a retroactive change as a point adjustment is a best practice in all cases, because it makes the event more visible.	4	4	5
Tailor	49	07. Change Control	06. Analysis & Management Reporting	Rebaselining (resetting variances) is restricted.	Resetting cost and schedule variances may be required and has less consequence for lower impact projects. Rules will depends upon contract requirements. If EV reported externally, the customer should be included and may need to approve. If not approved by customer, someone in the PM chain of command should approve.	3	4	5

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Tailor	50	07. Change Control	02. Planning & Scheduling	Freeze Period changes are restricted.	Adherence to freeze period facilitates forward planning. Recommend project add visibility to planning horizon and freeze period to verify planning for upcoming scope has occurred. For short duration projects, it may be appropriate to make changes in the freeze period.	2	3	4
Tailor	51	08. Material Management	08. Material Management	Significant material and subcontracts assigned to unique WPs or CAs (HDV concept).	Advanced concept. In all cases, the schedule and WBS should segregate major equipment and subcontracts with significant execution risk.	2	3	4
Tailor	52	09. Subcontract Management	02. Planning & Scheduling	Utilize vertical alignment monthly with the subcontractors current schedule to logically drive prime's schedule.	Risk based. Consider the capability of typical subcontractors for the scope when defining requirements. Consider modeling performance within the prime contractors IMS supported by existing subcontractor deliverables.	3	4	5
Tailor	53	10. Risk Management	02. Planning & Scheduling	Risk assessed when developing the baseline.	All projects must assess risk. Small projects <$10M may not have any risks with impacts worthy of tracking, but should assess the potential. In addition, all projects with risks should have MR. Graded approach on tool selection	3	4	5
Tailor	54	10. Risk Management	06. Analysis & Management Reporting	Risks be identified and tracked formally.	Managing risks (if defined) is foundational. Small project <$10M tools may be more basic.	2	4	5

Appendix B – EVMS Guideline Attribute Group

EVMS SURVEILLANCE REVIEW MAPPING

EIA-748 Guideline	Attribute		1. Organizing	2. Planning & Scheduling	3. Budgeting & Work Authorization	4. Accounting Considerations	5. Indirect Cost Management	6. Analysis & Management Reporting	7. Change Control	8. Material Management	9. Subcontract Management	10. Risk Management	Totals	(S)econdary Considerations
		Attribute Level# Primary Tests	11	10	21	6	5	12	10	5	1	1	82	
		Attribute Level # Secondary	5	20	13	7	3	21	4	1	6	4	84	

GL	Att	Attribute	Process Group Mapping										(S)econdary Considerations
1	1	**PRODUCT ORIENTED WBS.** Is the product-oriented WBS used for a given project extended to the control account level as a minimum?	P		S								WAD statement content not matching WBS Dictionary
1	2	**USE OF ONE WBS.** Does the WBS include all authorized project work and any revisions resulting from authorized changes and modifications?	P	S	S				S				Authorized work, changes and modifications not fully incorporated
1	3	**WBS REPORTING LEVEL REQUIREMENTS.** Are all WBS elements specified for external reporting?	P					S					Performance measurement data summarization (external reporting)
1	4	**DESCRIPTION OF WORK.** Is the WBS arranged in a hierarchy and constructed to allow for clear and logical groupings, including identification of subcontractors?	P								S		Subcontractor identification in the WBS
2	1	Are all authorized tasks assigned to organizational elements?	P					S					Performance measurement data summarization (external reporting)
2	2	Are major subcontractor and inter-organizational work efforts identified and integrated into the project Organizational Breakdown Structure (OBS)?	P								S		Major subcontractor integration into the OBS
3	1	Are the planning, scheduling, budgeting, work authorization and cost accumulation systems integrated with each as other as appropriate, via common data elements and a common coding structure through the WBS and the OBS at the control account level (at a minimum) through the total project level?	P	S	S	S							Check for issues related to integration of respective subsystem common data elements
3	2	MAJOR SUBCONTRACTOR EVMS CLAUSE FLOWDOWN REQUIREMENT. Is the subcontractor integrated into the prime EVMS systems?		S				S			P		IMS data integration, performance measurement data summarization
4	1	Is there a process that clearly defines the indirect account structure, indirect manager's assignment, responsibility, and authority, and how indirect budgets are established and indirect cost expenditures controlled.					P						
5	1	Is each control account assigned to a single organizational element directly responsible for the work and identifiable to a single element of the WBS?	P										
5	2	Does the CAM have responsibility, authority, and accountability for the work scope and performance of the control account?	P						S				BCP/WAD check for change control
5	3	Is there only one CAM assigned to each control account?	P										
5	4	Are control accounts established at appropriate levels based on the complexity of the work and the control and analysis needed to manage the work effectively?	P		S			S					Budget/Work aurhorization responsibility. Analysis check for span of control issues - open CA's current period SV or CV at +/- 10% for three consecutive months.
6	1	Does the IMS reflect all authorized, time-phased discrete work to be accomplished, including details for any significant subcontracted effort and High Dollar Value (HDV)/ critical materials that could affect the critical path (CP) of the IMS?		P						S	S		Identification of High dollar value/Critical material and subcontracted effort in the IMS
6	2	Does the current schedule provide actual status including forecast start and completion dates consistent with the month end status (data) date for all discrete authorized work?		P									
6	3	Does the network schedule/IMS describe the sequence of work (horizontal integration) and clearly identify significant interdependencies that are indicative of the actual way the work is planned and accomplished at the level of detail to support project critical path development?		P									
6	4	Is there vertical schedule integration, (i.e., consistency of data between various levels of schedules including subcontractor and field level schedules) and do all levels of schedules align with the EVMS and schedule of record?		P							S		Check for consistency of data between the IMS and subcontractor schedules
6	5	Does the IMS assign resources to all activities (non SVT, non milestone and non schedule margin)?		P									

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GL	Att	Attribute	Process Group Mapping										(S)econdary Considerations
6	6	Does the IMS establish reasonable durations for all activities?		P	S			S					Check for issues pertaining to baselined resource requirements and availability of resources; Check for issues pertaining to forecasted resource requirements and availability of resources
6	7	Is total float reasonable?		P									
6	8	Is schedule margin (if any) identified, logically and appropriately planned in the baseline and forecast IMS?		P								S	Use of schedule margin in the IMS commensurate with schedule risk
6	9	Are significant and probable risk mitigation steps included in the baseline and forecast IMS and do these steps align with applicable mitigation activities defined in the risk registry?		S								P	Identification of high and moderate risk mitigation activities in the IMS
7	1	Are meaningful and objective completion criteria aligned with technical performance goals and used for measuring the progress of milestones, events, and other indicators?		P									
8	1	Are all of the elements of the PMB (Scope, Schedule, and Budget) aligned?		S	P			S					Integration of scope, schedule, managerial reporting, and budget/work authorization
8	2	Does the time-phased PMB represent a reasonable plan for completing the project?		P	S								Check for resource budget time-phasing reasonableness
8	3	If an OTB/OTS has been approved, does the PMB reflect the total allocated budget (TAB) value?			P			S					Summarization and Management Reporting - CPR
8	4	Are summary level planning packages established above the control account level for far-term effort that identifies scope, schedule, and associated budget?		S	P								Identification of SLPP scope and schedule
9	1	Do Work Authorization documents identify scope of work, budget by element of cost, and period of performance?	S	S	P								WAD scope consistent with CWBS Dictionary, WAD POP consistent with IMS,
9	2	Does the contractor require that work scope, schedule, and budget are authorized before the work is allowed to begin and actual costs are incurred?			P	S							Timing of actual cost incurred (prior to WAD signature)
9	3	Within control accounts, are budgets segregated and planned by element of cost (e.g., labor, material, subcontract, and other direct costs)?			P								
10	1	Are discrete work packages relatively short in time or do they have objective interim measures or milestones, such as points of technical achievement to minimize the subjectivity of in-process evaluation and enable accurate performance assessment?		S	P								IMS check of discrete WPs that meet test criteria
10	2	Is future work which cannot be planned in detail subdivided to the extent practicable for budgeting and scheduling purposes?	S	S	P								PP scope and schedule substantiation
10	3	Do all work packages and planning packages have a budget or assigned value expressed in terms of dollars, labor hours, or other measurable units?			P								
10	4	Is a single EVT (Discrete, LOE, or Apportioned) assigned per WP?		S	P								IMS check for activities with more than one category (Discrete, LOE, or Apportioned) per WP
10	5	Are WPs clearly distinguishable from all other WPs including the titles being unique and consistent with the scope of the WP?			P								
10	6	Are WP or activity (where performance is taken) EVTs consistent with the manner in which the resource budgets (all elements of cost) are planned to be performed and progress measured?		S	P								IMS check for activity BCWS time-phasing compared to QBD % complete
10	7	Are detailed work packages planned as far in advance as practicable and is work progressively subdivided into detailed work packages as requirements are defined?		S	P								IMS check for PPs with actual start date
10	8	Can the work package and planning package budgets be substantiated?			P								
11	1	Does the sum of all work package budgets plus planning packages within control accounts equal the budgets authorized to those control accounts?			P								

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12	1	Is the LOE EV technique only used for effort where measurement is impractical or supportive in nature? (Impractical refers to effort that would not affect discrete major end-item deliverables if slippage occurs)		S	P								IMS check for LOE on critical and driving paths.
12	2	Is the co-mingling of LOE and discrete effort within a control account minimized, and when co-mingled within a a control account is performance of the discrete effort separately evaluated?			P			S					In commingled CA's, check for separate evaluation (managerial analysis) of LOE and discrete
12	3	Is the amount of LOE activity in the plan appropriate for the performing organizations utilizing it, and is it limited?			P								
13	1	Are indirect budgets managed and incorporated into the PMB in concert with documented processes and current rates (i.e., approved, provisional, proposed)?					P	S	S				Check ETCs use most current rates; Check BCPs use most current indirect budget rates during contract changes
14	1	Is MR held outside the PMB?			P						S		Check for placement of major subcontract MR , and whether subcontactor MR is combined with prime's MR
14	2	Is MR use controlled and are records maintained that show how MR is used (sources, uses, control account affected, current value)?						S	P				Check for differences related to summarization and Management Reporting - IPMR/CPR
14	3	Is UB part of the PMB, have defined scope traceable to contractual actions, and is it controlled and limited to newly authorized effort which cannot yet be distributed to WBS and OBS elements at or below the reporting level?			P			S	S				Check for differences related to summarization and Management Reporting - IPMR/CPR; UB Changes
15	1	Is there a reconciliation of the CBB to the NCC plus AUW, the CBB to the TAB, and does the sum of the control account budgets for higher level WBS elements, UB, and MR reconcile with the TAB?			P			S					Check for differences related to summarization and Management Reporting - IPMR/CPR
16	1	Is the actual cost of work performed (ACWP) in the EVMS Cost Tool formally reconciled each month with the actual costs in the accounting system?				P							
16	2	Is the manner in which the contractor classifies its direct cost (direct labor, material, other direct costs) and credits consistent with their approved disclosure statement?				P							
16	3	Are direct costs recorded in the control account on the same basis as budgets were established and, at a minimum, by element of cost (EOC)?				P		S					BCWP validity check
16	4	Control accounts or work packages opened and closed based for cost collection on the start and completion of work contained therein?				P		S					BCWP validity check
17	1	Can direct costs be summarized by element of cost, from the Control Account or Work Package charge number level through the WBS hierarchy without allocation of a single control account to two or more higher-level work breakdown structure elements?	S			P							Direct cost summarization through the WBS - Check for WBS issues
18	1	Can direct costs be summarized by element of cost, from the Control Account or Work Package charge number level through the OBS hierarchy without allocation of a single control account to two or more higher-level work breakdown structure elements?	S			P							Direct cost summarization through the OBS - Check for OBS issues
19	1	Are indirect costs charged to the appropriate indirect pools?					P						
20	1	Does the contractor's system have the capability to provide unit costs, equivalent unit or lot costs in terms of labor, material, other direct, and indirect costs as required by the project?				S				P			Material accounting system - identification of unit/lot costs, recurring/non-recurring
21	1	Are material actual costs recorded on the same basis in which budgets were planned and performance is claimed?				S		S		P			Check timing of ACWP; Check BCWP consistent with EVT,
21	2	Is HDV material performance (BCWP) recorded in one of the following ways: 1) upon receipt of material but no earlier, 2) issue from inventory, or 3) consumption of the material?		S	S					P			IMS HDV identification: HDV LOE activities in IMS; Check LOE validity HDV Material; WP/Activities with budgets without negotiated POs, material EVT;
21	3	Does the material or other system provide for the accountability for material purchased to include residual inventory for the project?				S				P			Material accounting system - tracks material purchased including residual
21	4	Does the Contractor's system provide for determination of price variance usage material analysis where applicable?.						S		P			Price and usage variance analysis

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22	1	Are the formulas to calculate SV, CV, and VAC consistent with IPMR/CPR and DOE Gold Card instructions?						P					
22	2	Is budgeted cost for work performed (BCWP) calculated in a manner consistent with the way work is planned			S			P					Check if BCWP is IAW with EVT
23	1	Monthly, are all significant cost, schedule, and technical impacts to the control account with regard to the contractor's internal thresholds discussed and documented? Are Variances addressed in the detail needed by program management?		S				P			S		Check with IMS for time element in VAR (impact to critical and driving paths); Check for subcontractor identification in the VAR when the subcontractor drives cost/schedule variances
23	2	Do variance analysis thresholds exist, and are they appropriate for the project(s) ?						P					
24	1	Are the variances between budgeted and actual indirect costs identified and analyzed routinely consistent with the budget authority in GL 4? If significant variances occur, are management corrective actions taken to reduce indirect costs and is project management notified?					P	S					Check for evidence of: internal and external cost variance analysis at pool level, and corrective actions to mitigate significant indirect rate impacts
24	2	Are there indirect analysis threshold established by each budget category?					P						Check for documentation communicating significant rate impacts to project management
25	1	Is performance measurement information summarized from the control account to the project level through the WBS and OBS for project management analysis purposes and customer reporting?						P					
26	1	Is there evidence the contractor's management uses and analyzes earned value information (at least on a monthly basis) as a part of their decision-making?	S					P					Check business rhythm for evidence of review and use of performance measurement information by PM
26	2	Are corrective actions identified, including activities to reduce cost/schedule impacts. Do the corrective actions include a completion schedule and the identification of person(s) responsible for executing the corrective action plans?		S				P				S	Check for corrective action IMS forecast dates, risk mitigation actions in VARs and updates to risks/opportunities in the risk register
27	1	ESTIMATE FREQUENCY: Are estimates of cost at completion generated with sufficient frequency to provide identification of future cost problems in time for possible corrective or preventive actions?				S		P					Check for validity of the ACWP
27	2	ESTIMATE LEVEL: Are estimates of cost at completion generated at the level where resources are planned, and actuals cost are collected by control account managers? And are estimates coordinated with those responsible for resource availabilities?		S				P					IMS check for forecasted ETCs (resource spreads) - IMS/cost tool comparisons, check for forecasted ETCs alignment with finish date
27	3	ESTIMATE REALISM: Are monthly estimates of costs at completion based on: (1) Performance to date? (2) Material commitments? (3) Actual costs to date? (4) Knowledgeable projections of future performance? (5) Estimates of the cost for contract work remaining (including known risks and/or opportunities) to be accomplished? (6) Direct and indirect rates?		S			S	P					IMS check for forecasted ETCs (resource spreads) - IMS/cost tool comparisons; Check ETCs based on most current indirect rates;
27	4	COMPREHENSIVE ESTIMATE: Are annual comprehensive estimates of costs prepared with increasing degrees of information including the establishment of ground rules and assumptions for each cycle and future cost estimates by elements of cost?					S	P				S	EAC incorporates indirect rates and risk/opportunity analysis
27	5	ESTIMATE REPORTING: Are the contractor's estimates of costs at completion reconcilable with cost data reported to the Government?						P				S	EAC incorporates risk/opportunity analysis
28	1	Are authorized changes incorporated in the PMB in a timely manner?		S	S				P				Checks of CBB Logs, WADs, and IMS for incorporating PMB changes
28	2	For unpriced change orders, detailed planning is maintained for near-term work. After definitization, any budget remaining in undistributed budget will be planned and budgeted within control accounts, summary level planning package packages, or management reserve.		S	S				P				WAD documentation check incorporating changes into the PMB; Check for detailed planning of AUW in the IMS IAW SD
28	3	Incorporating changes must not arbitrarily eliminate existing cost and schedule variances.						S	P				Analysis check - variances eliminated

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		Attribute Level # Secondary	5	20	13	7	3	21	4	1	6	4	84	

GL	Att	Attribute	Process Group Mapping										(S)econdary Considerations
29	1	Are baseline changes reconcilable to the prior baseline and does the baseline change documentation include all necessary information for effective control?						S	P				CPR Check - CBB data summarization
29	2	Are changes to BCWS in open WPs limited to time phasing the remaining future budget outside the documented freeze period or provide additional detail? (not new scope) without a change in BAC. Are BCWS changes to future time phasing are approved?							P				
29	3	Is Management reserve limited to authorized work that is in-scope to the contract, but out of scope to a control account?. Management reserve, therefore, may not be applied to completed work packages, except to compensate for the effect of routine accounting adjustments in accordance with the organization's accounting practices.			S				P				Check for MR transactions not authorized by SD
30	1	Does the contractor limit retroactive changes to routine accounting adjustments, definitization of contract actions, customer or management directed changes, or to improve the baseline integrity and accuracy of performance measurement data?				S	S	S	P				Check for negative current period BCWS for indirect rates ; Check for negative current period BCWP; Check for negative current period entries for misallocated ACWP
31	1	Are project budgets (CBB or TAB) only revised through project authorization from DOE?			S				P				Check DOE authorization/approval documentation for budget traces to CBB/TAB
32	1	Are authorized changes to the PMB documented and traceable?			S			S	P				Check for managerial reporting issues through IPMR data inconsistencies; Confirm change to CBB is consistent with change in contingency value

Primary Process Count	11	10	21	6	5	12	10	5	1	1	82	
Secondary Process Count	5	20	13	7	3	21	4	1	6	4	84	