Internal Surveillance Review

of the

Fermi Research Alliance (FRA) Earned Value Management System (EVMS)

Fermi National Accelerator Laboratory
(FNAL)

March
2012

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1. SUMMARY OVERVIEW

The Earned Value Management System (EVMS) surveillance review of Fermi Research Alliance (FRA), Fermi National Accelerator Laboratory (FNAL) in Batavia, IL was held March 12-14, 2012. The peer review was conducted by EVM experts from three DOE Office of Science National Laboratories; with committee members from, Brookhaven National Laboratory (BNL), Argonne National Laboratory (ANL), and the Stanford Linear Accelerator Laboratory (SLAC).

The purpose of this surveillance review was to ensure that FRA:

1. Continues to meet the requirements and intent of the 32 EVMS Guidelines embodied in the ANSI/EIA-748B.
2. Confirm that the implementation of the EV system as certified by DOE OECM per the FRA EVM System Description and procedures

and to look for improvement opportunities to increase system effectiveness and management value.

The review was conducted consistent with the Office of Project Assessment (OPA) Earned Value Management System Surveillance Guide. The review committee included references to the 2011 EVMS Surveillance Review findings in this report.

The Review Committee participants (and the guidelines that they were responsible for) are identified in Appendix A. The review schedule/agenda is shown in Appendix B.

The NUMI Off-axis electron neutrino Appearance (NOvA) Project was the only project reviewed for EVMS implementation. The documents reviewed are identified in Appendix C and the individuals interviewed as part of this review are identified in Appendix D.

The Committee identified five Corrective Action Requests (CARs) and five Continuous Improvement Opportunities (CIOs). Four Continuous Improvement Opportunities (CIOs*) are designated with an asterisk and are suggested improvements requiring a Corrective Action. A summary of the CARs, CIO* and CIOs are listed below with detailed supporting documentation included in Section 2 of this report. Some of the CARs/CIO*s/CIOs may affect more than one guideline. If this is the case, the CAR/CIO*/CIO will appear in more than one guideline and will address the specific violation/corrective action for that particular guideline. A cross reference of page numbers and Guidelines is listed below.

1.1 Corrective Action Requests (CARs)

CAR01 - Estimate at Completion is not Utilized/Understood/owned by CAM (2011 - CAR01)

The CAMs continue to have difficulty understanding and taking full ownership of the EAC calculations based on responses during the CAM interviews. Some CAMs EAC were directly impacted by the problems with accruals. A similar CAR was written during the 2011 EVMS Surveillance Review identifying the same issue which has not been corrected as of this 2012 EVMS Surveillance Review. This is in violation of the following guidelines:

Guideline: 27, 22 Pages 34

CAR02 – Implementation of Change Requests (2011 - CAR02)

Change Requests are being implemented in the baseline prior to final approval. Administrative changes not part of CR process e.g. CAM change. The full cost/schedule impact from the proposed change request is not fully documented in the change request documentation package. A similar CAR was written during the 2011 EVMS Surveillance Review identifying the same issue which has not been corrected as of this 2012 EVMS Surveillance Review. This is in violation of the following guidelines:

Guideline 28,29,31,32 – Pages 35, 36, 38, 39, 40

CAR03 - Timing of VARs and Quality needs improvement (2011 - CAR03)

The quality and timeliness in preparation and approval of the Variance Analysis Reports (VARs) are not adequate for providing effective analysis of cost and schedule variances for proper use by the CAMs and project management.
Explanations and Corrective Actions need improvement and the CAMs need to improve their understanding of the trends and how to develop corrective actions. A similar CAR was written during the 2011 EVMS Surveillance Review identifying the same issue which has not been corrected as of this 2012 EVMS Surveillance Review. This is in violation of the following guidelines:

Guideline 22, 23 – See Pages 28, 29

CAR 04 - Objective Measurement of EV for % complete method (2011 - CAR12)

The use of percent complete for performance measurement is subjective per the CAMs for many activities particularly activities with durations of longer than two months. While Peg Points are used they are not providing objective performance measurement. A

similar CAR was written during the 2011 EVMS Surveillance Review identifying the same issue which has not been corrected as of this 2012 EVMS Surveillance Review. This is in violation of the following guidelines:

Guideline 7 – See Pages 13

CAR05 – Schedule Integrity – (2011 - CIO 09)

The NOvA Project Schedule contains open relationships, constraints, lags and based on some CAM interviews, the CAMs did not seem to "own" the schedule, in particular, they were not sure why constraints were used in the schedule. A CIO was written during the 2011 EVMS Surveillance Review Schedule identifying some of the same scheduling related issues which have not been fully resolved as of this 2012 EVMS Surveillance Review. This is in violation of the following guidelines:

Guideline 6 – See Pages 12

1.2 Continuous Improvement Opportunity (CIOs)

CIO-01* Accrual Procedure needs clarification

The Accrual procedure is inconsistent in providing valid estimates of current cost incurred. The CAMs need to be held responsible for accruals to ensure the actual cost of work performed and the estimate at completion are both accurately represented in the monthly reports. This CIO is referenced in:

Guideline 16 - Page 22

CIO-02* - Corrective Action Log not used effectively (CAR04 2011)

A corrective action log has been created which tracks corrective actions required stated in the variance analysis reports. Improvements are needed to provide effective tracking of the identified corrective actions to close. There has been progress made in this area (from the last review) but additional improvement is needed. This CIO is referenced in:

Guideline 23, 26 - Pages 30, 33

CIO-03* - Major subcontractors should be included in OBS

The Organizational Breakdown Structure needs to identify major subcontracts that are performing the work. A determination is needed as to what constitutes a major subcontract. This CIO is referenced in:

Guideline 2 Page 7

CIO-04* Additional CAM Training

CAM Training is still needed in a variety of process areas within EVMS, in fact a more comprehensive approach is recommended. A few examples include: Opening/Closing process for CA, Terminology e.g. EAC, WAD, CAP, and the use and purpose of the Corrective Action Log. This list is not an inclusive list.

All guidelines are affected. This CIO is referenced in the section identified as Other on Pages 41

CIO-05 – Disclosure Statement Is Not Current

Disclosure Statement has not been updated by recent DOE change in capitalization threshold to $500K. See Pages 21

Other:

Description/procedures documentation changes

Revise the reference to DOE Order 413.3A to 413.3B to be consistent with the FRA contract which was modified to include DOE Order 413.3B.
Include CAMs responsibility for accruals in system description changes
Incorporate System Description draft changes after review and comment by affected projects prior to DOE Review.
See Page 42

** CIO Requires a corrective action plan.*

The Review team identified several "Notable Improvements" comparing the EVMS Surveillance Review results from 2011 to 2012 as follows:

EVMS Review Data Posting

There is clear improvement in the knowledge and understanding of the EVMS concepts based on the CAM Interviews. CAM Refresher Training was conducted in January 2012 and the CAMs were more versed in their responses to the interview questions.

Project Controls

Additional Project Controls staff has been added to the NOvA project to provide more support to the CAMs in writing variance analysis and processing change requests. This additional support is valuable to the CAMs and needed to ensure the EVM system is functioning to its fullest capability and benefit to the Lab.

Actual Cost Reconciliation

The Actual Cost feed file that is downloaded from the accounting system and imported into Cobra on a monthly basis is now being verified and reconciled by an independent finance person prior to publishing the monthly reports. This is a best practice that FRA project personnel should continue as new projects are initiated.

EVMS Review Data Posting

The EVMS data for the Surveillance review was posted on the website over three weeks prior to the start of the review. This was a best practice that is strongly encouraged for project/surveillance reviews because it is extremely beneficial to the review team in preparing for the review.

Project Team Support

The NOvA Project Team was very helpful in providing the review team with the data requests in a timely manner. The quick turnaround of the review team requests provided the information needed to evaluate issues quickly and helps the project resolve misunderstandings and potential issues.

AREA 1: ORGANIZATION (Guidelines 1-5)

2.0 EVMS Guidelines

2.1 Guideline 1: Define the authorized work elements for the program. A work breakdown structure (WBS), tailored for effective internal management control, is commonly used in this process.

Reviewer Name(s): Cathleen Lavelle

Compliant with ANSI/EIA-748: Yes

Observations and Findings :

The NOvA project developed a hierarchical Work Breakdown Structure which logically breaks down the scope of work within the NOvA project. The WBS Dictionary which contains all the project work scope as defined in the Scope Baseline of the Project Execution Plan. The WBS Dictionary has been maintained to reflect any changes in scope and work authorization documentation has been updated to reflect the authorized changes although it is not apparent to the review when the changes were implemented in the work authorization documents. The WBS subdivides and logically organizes the entire project scope into its component elements to establish a framework for effective management control of the project's scope, schedule, and budget.

The NOvA WBS Dictionary describes the scope of each work element and is written to the lowest level of the WBS and maintained in the Open Plan schedule. The WBS Dictionary defines the scope content for each WBS. The WBS Dictionary within the PEP/PMP is documented down to Level 2 and 3 of the WBS only.

AREA 1: ORGANIZATION (Guidelines 1-5)

Guideline 2: Identify the program organizational structure including the major subcontractors responsible for accomplishing the authorized work, and define the organizational elements in which work will be planned and controlled.

Reviewer Name(s): Cathleen Lavelle

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

The OBS (Organizational Breakdown Structure) is documented in the Project Execution and is part of the determination for defining the project control accounts as evidenced by the Responsibility Assignment Matrix (RAM). Major subcontracts were not identified in the OBS, this has been identified in CIO-03*

The Work Authorization documents for the NOvA project exist and are maintained with Project Change Requests and Baseline Changes. The Work Authorization document includes the work scope statement (WBS Dictionary), total budget/schedule with attachments including a control account plan from Cobra, a schedule report from Open Plan outlining the activities with baseline and current start and finish dates. The work authorization documents are kept current with the latest baseline changes and approved as required. The Work Authorization documents are generated at the Control Account Level. The control account budgets were cross checked and verified against the Project RAM (Responsibility Assignment Matrix).

The Organizational structure within the NOvA PEP that was posted on the EVMS Review site includes WBS elements as part of the organizational structure - which is inconsistent with the intent of an organizational structure. The WBS elements represent a breakdown of work scope and not organizational entities. The document should be revised to correct this and ensure that only the organizational groups required to execute the work are identified on the Organization Chart.

The Work Authorization process is updated with baseline changes and through the interviews CAMs indicated they knew the purpose of the work authorization process.

CIO-03* **Major subcontractors should be included in OBS**

Subject (Issue): The ANSI Standard guideline requires the Organization Structure include the major subcontractors on the project that are responsible for accomplishing the work. The major subcontractors were not identified in the Organizational Structure for the NOvA project.

Referenced Guideline(s): 2

Referenced Data Trace: Organization Chart posted on the EVMS Review team Web site

Description of Issue: Guideline 2 indicates that major subcontractors should be identified in the Organizational Breakdown Structure (OBS). Currently, the Organization Chart in the PMP does not identify any subcontractors required to execute the work.

AREA 1: ORGANIZATION (Guidelines 1-5)

Recommendation: Each project should identify the "major" subcontracts working on the projects and revise the Organization chart to include them. In addition, FRA should define criteria for defining what a "major subcontractor" is and follow that guidance with new projects in the future. The major subcontractors should be identified in their respective PEP/PMP documentation. The Organization Chart should then be modified to include the identification of the name of the major subcontractors responsible for carrying out the work within the Project. In addition, it is recommended that the NOvA PEP Organizational structure posted on the EVMS Review web site be modified to document the Organizational structure with the organizations that report up to the Project Manager and not the WBS Level 2 Managers

AREA 1: ORGANIZATION (Guidelines 1-5)

Guideline 3: Provide for the integration of the company's planning, scheduling, budgeting, work authorization and cost accumulation processes with each other, and as appropriate, the program work breakdown structure and the program organizational structure.

Reviewer Name(s): Cathleen Lavelle

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

The NOvA project has demonstrated the integration of the EVMS system planning and scheduling, systems and the work authorization and change control processes using the work breakdown structure (WBS) and organizational breakdown structure (OBS). This integration is evidenced through the monthly cost and schedule performance reports (CPR Format 1 (WBS) and Format 2 (OBS)) which documented the Baseline total Cost consistently between the two reports for the reporting period provided to the review team October 2011 through December 2012.

AREA 1: ORGANIZATION (Guidelines 1-5)

Guideline 4: Identify the company organization or function responsible for controlling overhead (indirect costs).

Reviewer Name(s): Sue Perino

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

Reviewed the Cost Accounting Standards (CAS) Disclosure Statement dated September 26th, 2011 for changes effective October 1, 2011 and interviewed C. Conger (CFO), M. Rhoades, D. Keiner and S. Saxer and confirmed that the CFO's office is responsible for determination and implementation of indirect rates and controlling overhead costs. The documented policy clearly defines how overhead resources are assigned, budgets are established, and expense is controlled.

AREA 1: ORGANIZATION (Guidelines 1-5)

Guideline 5: Provide for integration of the program work breakdown structure and the program organizational structure in a manner that permits cost and schedule performance measurement by elements of either or both structures as needed.

Reviewer Name(s): Cathleen Lavelle

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

The NOvA project effectively used their WBS and OBS to structure the scope of the project and to define the control accounts for the project using the Responsibility Assignment Matrix (RAM). The RAM identified all WBS elements down to the control account level and assigned Control Account Managers to the intersection of the WBS and OBS. The work authorization documents authorize work by control account and identify the scope, budget (CAP), and schedule. The work authorization documents appear to be updated to reflect baseline changes when the scope, cost and schedule changes have been incorporated into the baseline document. The project demonstrated reporting of the control account budgets by WBS (CPR Format 1) and OBS (CPR Format 2) and the Budgeted Cost at Completion matched by month.

2.2 Guideline 6: Schedule the authorized work in a manner which describes the sequence of work and identifies significant task interdependencies required to meet the requirements of the program.

Reviewer Name(s): Kathy Bailey

Compliant with ANSI/EIA-748: **No**

Observations and Findings:

The NOvA Project schedule accurately reflected discrete work traceable to the WBS with critical target dates identified. Development of the project's critical path is hindered by missing schedule network relationships and reliance on a lags and constraints methodology.

CAR-05

Subject (Issue): Schedule Integrity (2011 CIO09)

Referenced Guideline(s): #6

Referenced Data Trace: 1) NOvA Activity Count for In Progress and Planned Activities indicates missing relationships – WBS trace 2.6.1.3.47; 2) Multiple lags in relationships - WBS trace 2.5.3.1.10 with lags of FS-42d, FF+10d,SS+70d.; 3) Constraints exist on 5 of 14 active/planned activities in WBS trace 2.5.1.1; 4) Multiple CAM interviews leveraged PC inputs to explain constraints

Description of Issue: A review of the NOvA project schedule indicated to the review team that there are concerns related to the schedule integrity. Specific concerns are: 1) Activities are missing successors or predecessors 2) Utilization of Lags and 3) Significant # of Constraints 4) CAM did not "own" all aspects of schedule – specifically constraints. This issue was documented as a CIO in the 2011 EVMS Surveillance Review Final Report as a possible concern that should be addressed. The results of the 2012 EVMS Surveillance Review concluded that the schedule logic had not been corrected and therefore, the review team elected to document this issue as a CAR requiring a corrective action plan.

Recommendation: The NOvA project schedule needs to be reviewed for schedule integrity. Schedule integrity is necessary in order to ensure the schedule accurately represents the project activity sequence, the correct forecast of schedule start and finish dates for all activities, milestones, and project early start finish dates. A review of all activities and logic will ensure that the project schedule provides an effective and valuable management tool for assessing and analyzing schedule progress; and will ensure that the project schedule represents the true critical path and near critical activities to assist project management in effectively managing the project schedule.

Update schedule to include the required relationships with limited utilization of lags and constraints. Include involvement of the respective CAM in the changes/development of the schedule impacts. Review the schedule logic on a monthly basis to determine if there are logic errors/missing logic ties or lags/constraints that can be corrected to ensure complete and unconstrained schedule logic.

AREA 2: PLANNING, SCHEDULING, and BUDGET (Guidelines 6-15)

Guideline 7: Identify physical products, milestones, technical performance goals, or other indicators that will be used to measure progress.

Reviewer Name(s): Kathy Bailey

Compliant with ANSI/EIA-748: **No**

Observations and Findings:

Project correctly utilized EV techniques – LOE, Units Complete, 50/50 and 0/100. Utilization of the % complete technique for tasks > 2 months displayed subjective and "up-to" peg point criterion. See CAR-04. This issue was identified as a CAR -04 in the 2011 EVMS Surveillance Review and was not adequately corrected for the 2012 EVMS Surveillance Review

CAR-_04 Objective Measurement of Earned Value Percent Complete method implementation (2011 CAR -12)

Subject (Issue): EVMS Techniques

Referenced Guideline(s): #7

Referenced Data Trace: 1) Project has 76 incomplete activities (durations > 40d) utilizing % complete techniques without peg points (progression/objective criterion) - 2.5.3.3.4, 2.6.2.2.4. 2) January "Turn Around Export" lists peg point requirements with percent complete status not reaching the threshold requirement - 2.0.1.1.1.2.11 lists percent complete at 10% with a peg point requirement of "30% - requisition written.

Description of Issue: Utilization of the EV technique - % complete activities (with durations > 40d) with subjective assessment for taking on earned value performance measurement.

Excerpts from 2011 - CAR-12 "Based on the requirements set forth in FRA's System Description and guidelines from NOvA's Implementation of FRA's Earned Value Management System, CAMs are required to develop activities for their respective control account(s). While developing those activities, the CAMs are required to plan activities with durations that do not exceed two financial periods (two months); and if those durations exceeded two periods, an objective method for performance is to be used to effectively measure earned value. Based on interviews with the CAMs and the project controls personnel assigned to the project, it was discovered that there were activities that exceeded two periods without documented, objective milestones for objective performance measurement. Effective, objective measurement was not established for all activities that exceeded a two month duration. This is not in line with FRA's EVMS System Description, and as a result non compliances exist for those activities without objective performance metrics."

Recommendation: This corrective action was not fully addressed from the 2011 review and therefore it is recommended that an in-depth review of the activities identified using the percent complete method and review and revise the method to ensure that the resulting performance is based on an objective assessment and not a subjective one. Utilize peg points and/or steps to measure objective performance on all % complete activities greater than two months in duration for objective progress measurement.

AREA 2: PLANNING, SCHEDULING, and BUDGET (Guidelines 6-15)

Guideline 8: Establish and maintain a time-phased budget baseline, at the control account level, against which program performance can be measured. Initial budgets established for performance measurement will be based on either internal management goals or the external customer negotiated target cost including estimates for authorized but undefinitized work. Budget for far-term efforts may be held in higher level accounts until an appropriate time for allocation at the control account level. On government contracts, if an over-target baseline is used for performance measurement reporting purposes, prior notification must be provided to the customer.

Reviewer Name(s): Julia Chaffin

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

Committee found that the project, NOvA, does establish and maintain a time-phased budget baseline at the control account level. This time-phased budget is used to measure performance. The initial budgets appeared to have been established for measurement against internal and external goals. There were no far-term efforts held at higher level accounts -planning packages were not used on the project. The project uses work packages throughout the project. Over-target baseline is not used on the NOvA project.

Guideline 9: Establish budgets for authorized work with identification of significant cost elements (labor, material, etc.) as needed for internal management and for control of subcontractors.

Reviewer Name(s): Julia Chaffin

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

Budgets were established for authorized work that identified significant cost elements for internal management and control of subcontractors. The committee reviewed costs both in the schedule and the cost tool and significant cost elements were seen at labor, material and M&S cost elements. The contractor's costs were held separate from labor and materials.

Guideline 10: To the extent it is practicable to identify the authorized work in discrete work packages, establish budgets for this work in terms of dollars, hours, or other measurable units. Where the entire control account is not subdivided into work packages, identify the far term effort in larger planning packages for budget and scheduling purposes.

Reviewer Name(s): Julia Chaffin

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

Authorized work was identified as discrete work packages. These budgets are established in terms of dollars, hours and M&S dollars. The NOvA project utilizes only work packages to identify authorized work. No planning packages were identified. The NOvA team was consistent throughout the interview process that no planning packages were used.

Guideline 11: Provide that the sum of all work package budgets plus planning package budgets within a control account equals the control account budget.

Reviewer Name(s): Julia Chaffin

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

The project does not utilize Planning Packages. All work packages within a control account equal the control account budget. The committee confirmed that all work package budgets within a control account did equal the control account budget by reviewing the Responsibility Assignment Matrix and the control account plans in the work authorization documents.

Guideline 12: Identify and control level of effort activity by time-phased budgets established for this purpose. Only that effort which is unmeasurable or for which measurement is impracticable may be classified as level of effort.

Reviewer Name(s): Kathy Bailey

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

The NOvA project's RAM document provided ease in analysis for the control of LOE activities, budgets and schedules. Although predominately compliant with the policy's intent, LOE and discrete work packages were mixed in some control accounts with the LOE % exceeding 15%. The LOE technique has the capacity to drastically distort evaluations of progress and should be utilized judicially and applied only to work effort or control accounts that are not readily measureable such as management and oversight activities. The project should review and update control accounts exceeding the generally accepted threshold of 15%. (examples: WBS 2.4.4, 2.4.5, 2.7.3).

AREA 2: PLANNING, SCHEDULING, and BUDGET (Guidelines 6-15)

Guideline 13: Establish overhead budgets for each significant organizational component of the company for expenses which will become indirect costs. Reflect in the program budgets, at the appropriate level, the amounts in overhead pools that are planned to be allocated to the program as indirect costs.

Reviewer Name(s): Susan M. Perino

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

Reviewed the Cost Accounting Standards (CAS) Disclosure Statement dated September 26th, 2011 for changes effective October 1, 2011 and interviewed C. Conger (CFO), M. Rhoades, D. Keiner and S. Saxer and confirmed that the CFO's office is responsible for determination and implementation of indirect rates and controlling overhead costs. The documented policy clearly defines how overhead resources are assigned, budgets are established, and expense is controlled. Also reviewed the policy on indirect cost allocation and sample charts of account.

CIO-05 Disclosure Statement is not Current

Subject (Issue): Disclosure Statement has not been updated by recent DOE change in capitalization threshold to $500k.

Referenced Guideline(s): Although this issue does not directly impact the cost of the project being evaluated, it was noted during the review of the Disclosure Statement and is recommended that the Disclosure Statement be updated to reflect the current standards followed by DOE during the next update timeframe.

Referenced Data Trace:

Description of Issue: DOE has changed the capitalization criteria to $500k effective Oct. 1, 2011 and the most recent Disclosure Statement with an effective date of October 1, 2011 does not reflect the recent change.

Recommendation: Update the Disclosure Statement to state capitalization criteria at $500k.

Guideline 14: Identify management reserves and undistributed budget.

Reviewer Name(s): Julia Chaffin
Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:
FRA has provided guidance in their system description and procedures related to Undistributed Budget but the NOvA project does currently does not utilize undistributed budget at this time. Management Reserves have been identified.

Guideline 15: Provide that the program target cost goal is reconciled with the sum of all internal program budgets and management reserves.

Reviewer Name(s): Julia Chaffin

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings :

Program cost goals are reconciled with the sum of all internal program budgets and management reserves.

2.3 Guideline 16: Record direct costs in a manner consistent with the budgets in a formal system controlled by the general books of account.

Reviewer Name(s): Susan M. Perino
Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

Reviewer performed various data traces including the University of Minnesota PO # 565879 and 596764 and University of Virginia 578111. Also interviewed Project Controls staff and Project Accounting Staff traces to payment documentation and project cost data were without exception. All costs appear to be appropriately categorized and other than the fluctuation of accrual data and the limited involvement of most CAMs in determining the accrual amounts (See CIO 01*), direct costs appear to be being processed correctly. The issue of CAM's lack of involvement in accrual determination was also identified in a number of CAM interviews.

CIO-01****Accrual Procedure needs clarification***

Subject (Issue): Accrual procedure is inconsistent in providing valid estimates of current cost incurred. This can result in incorrect Estimates to Complete. The CAM is not always aware of what cost has been accrued but uses the total booked cost to date (with accruals) and adds only the estimate of work to go to determine the EAC. If the accrual does not reflect all work completed, the EAC will be wrong.

Referenced Guideline(s): Guideline 16

Referenced Data Trace: There is no formal process/procedure to require CAM's to approve the accrual amount before submitting it for entry into the financial system.

Description of Issue: When CAM's are not fully aware of what costs have been represented in the financial system as costed work performed, they could be estimated cost of work remaining incorrectly which also may result in inaccurate Total Estimated Cost for the project. If they know work was completed (and assume that it was thereby costed) and only add cost of work remaining to the actual cost, the project could be off on its EVMS status.

Recommendation: CAM's should be required to approve accruals or be informed of what work in being accrued each month. CAM's should be held responsible for the accruals on the work assigned to them.

AREA 3: ACCOUNTING CONSIDERATIONS (Guidelines 16-21)

Guideline 17: When a work breakdown structure is used, summarize direct costs from control accounts into the work breakdown structure without allocation of a single control account to two or more work breakdown structure elements.

Reviewer Name(s): Susan M. Perino

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

The WBS, the WBS Structure, the Performance reports and the chart of accounts were reviewed. No allocation of a single control account to two or more work breakdown structure elements were noted.

AREA 3: ACCOUNTING CONSIDERATIONS (Guidelines 16-21)

Guideline 18: Summarize direct costs from the control accounts into the contractor's organizational elements without allocation of a single control account to two or more organizational elements.

Reviewer Name(s): Susan M. Perino

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

The WBS, the Responsibility Assignment Matrix, the Performance reports and the chart of accounts were reviewed. No allocation of a single control account to two or more organizational elements were noted.

AREA 3: ACCOUNTING CONSIDERATIONS (Guidelines 16-21)

Guideline 19: Record all indirect costs which will be allocated to the project.

Reviewer Name(s): Susan M. Perino

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings :

Reviewed the Cost Accounting Standards (CAS) Disclosure Statement dated September 26th, 2011 for changes effective October 1, 2011 and interviewed the Chief Financial Officer for FRA (CFO), and four Accounting/Finance staff members and confirmed that the CFO's office is responsible for determination and implementation of indirect rates and controlling overhead costs. The documented policy clearly defines how overhead resources are assigned, budgets are established, and expense is controlled. Also reviewed the policy on indirect cost allocation and sample charts of account. No issues during data traces related to inappropriate indirect cost allocations to the project were noted.

AREA 3: ACCOUNTING CONSIDERATIONS (Guidelines 16-21)

Guideline 20: Identify unit costs, equivalent unit costs, or lot costs when needed.

Reviewer Name(s): Susan M. Perino
Compliant with ANSI/EIA-748: **N/A**

Observations and Findings
This guideline applies to manufacturing processes which are not applicable to this project.

AREA 3: ACCOUNTING CONSIDERATIONS (Guidelines 16-21)

Guideline 21: For EVMS, the material accounting system will provide for:

- **Accurate cost accumulation and assignment of costs to control accounts in a manner consistent with the budgets using recognized, acceptable, costing techniques.**
- **Cost performance measurement at the point in time most suitable for the category of material involved, but no earlier than the time of progress payments or actual receipt of material.**
- **Full accountability of all material purchased for the project including the residual inventory.**

Reviewer Name(s): Susan M. Perino

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

No exceptions were noted during the data traces that would indicate incorrect or inappropriate recording of material costs. Material costs are accrued upon receipt or when title is transferred as is appropriate. Milestones are used when appropriate and when contract language requires it. No exceptions were identified for this guideline.

AREA 4: ANALYSIS AND MANAGEMENT REPORTS (Guidelines 22-27)

2.4 Guideline 22: At least on a monthly basis, generate the following information at the control account and other levels as necessary for management control using actual cost data from, or reconcilable with, the accounting system:

- **Comparison of the amount of planned budget and the amount of budget earned for work accomplished. This comparison provides the schedule variance.**
- **Comparison of the amount of the budget earned and the actual (applied where appropriate) direct costs for the same work. This comparison provides the cost variance.**

Reviewer Name(s): Jennifer Fortner

Compliant with ANSI/EIA-748: **No**

Observations and Findings:

Monthly performance reports are being generated to show both cost and schedule variance down to the CA level. These reports were reconcilable. During interviews, CAMs were asked about the monthly reporting process and each produced some form of monthly report (VAR, CPR, etc) to discuss their cost/schedule variances. CAMs understood that monthly performance was obtained through monthly schedule statusing process and was applied against planned results and actuals. There were issues in understanding the accrual process, which could impact the determination of cost variance (see CIO*01 for further details).

Further issues with VARs were discovered when looking at the signature dates and review. It still appears that, while the process time has improved, VARs are still not fully processed/approved in timely manner (even with the recently clarified definition of timely being extending to PARS-II reporting due date). Along these lines, the PM is writing, reviewing, and approving his own VARs which needs to be corrected. The same individual that writes the VAR should not also approve the VAR.

CAR-03

Subject (Issue): Timing Of VARs & Quality Needs Improvement (CAR-03 FY11)

Referenced Guideline(s): 22, 23

Referenced Data Trace: Examination of VARs and CPRs provided on the docDB for the months of Oct – Jan, CAM interviews

Description of Issue: Based on an assessment of the project's document database, variance analysis reports (VARs) are still not completed in a timely manner during the monthly status cycle. The VARs were sampled for WBS 2.0.3.2 and 2.2.1 for the months of October, November, December 2011, and January, 2012. The VARs were not approved or fully signed until February/March (and in one case not at yet prepared). This lag in generation versus final approval implies that the information is not being review in a timely manner and therefore not available for use by senior management or customer reporting. A clear project business process/monthly update cycle regarding the VAR process was outlined during the review and improvements have been made since the last review, but this process needs to continue to be enforced.

Recommendation: Continue exercising the monthly process and update cycle outlined with greater enforcement. Implement process for PM to write VARs but not be his own reviewer/approver.

AREA 4: ANALYSIS AND MANAGEMENT REPORTS (Guidelines 22-27)

Guideline 23: Identify, at least monthly, the significant differences between both planned and actual schedule performance and planned and actual cost performance, and provide the reasons for the variances in the detail needed by program management.

Reviewer Name(s): Jennifer Fortner

Compliant with ANSI/EIA-748: **No**

Observations and Findings:

VARs were provided for Oct, Nov, Dec, and Jan. While all CAMs were able to produce the reports (as noted in 5.1) and they were able to state how they recognized whether they reached the threshold requiring variance explanation, not all were able to discuss the reasons behind the variances in detail. In some instances, there was confusion about how accruals were applied (see CIO*-01 for further details) and creating cost variances. Other situations found the CAM stating that the variances were trending toward improvement when the values had actually resulted in the opposite for the months in question. This could be helped with graphical trend data supplied at the CA level (CPI/SPI) and available for the CAMs. Most CAMs were not aware of the status of their current corrective actions listed and in some instances, had corrective actions that would not be classified as such but they were listed in the Corrective Action Log anyway. Timeliness of VAR preparation and approval was also an issue discovered here.

CAR-03

Subject (Issue): Timing Of VARs & Quality Needs Improvement (CAR-03 FY11)

Referenced Guideline(s): 22, 23

Referenced Data Trace: Examination of VARs and CPRs provided on the docDB for the months of Oct – Jan, CAM interviews

Description of Issue: Review of VARs within multiple control accounts and CAM interviews uncovered that the quality of the analysis does not allow for proper utilization by project management. Explanation of variance, description of the problem, impacts, and corrective actions are not identified in sufficient detail needed for project management. Lack of understanding regarding trends, confusion on actuals/accruals, and development of corrective actions, does not allow the project to use the VARs effectively.

Recommendation: The Project Controls group should generate SPI/CPI trend charts each month at the control account level and ensure project CAMs use them for performance analysis. Seeing these trends would assist some of the CAMs in a more accurate assessment of where their variances are heading. A quality review of the problem, impacts, and corrective actions is needed. This could result in the identification of one-on-one training needed for VAR writing.

AREA 4: ANALYSIS AND MANAGEMENT REPORTS (Guidelines 22-27)

CIO-02*

Subject (Issue): Corrective Action Log Not Effectively Used (CAR-04 FY11)

Referenced Guideline(s): 23, 26

Referenced Data Trace: Examination of VARs and CPRs provided on the docDB for the months of Oct – Jan, Corrective Action Log on docDB, CAM interviews

Description of Issue: Previously, this issue was discussed in the FY11 review under CAR-04. Since the last review, a log has been provided to the team, but improvements are needed in the mechanics of implementation, awareness of the log, and quality of corrective actions.

Recommendation: Review the process used for the corrective action log and make improvements regarding the traceability from month to month. For example, if no corrective action is required then an entry in the log is not needed. Additionally, if a CA VAR is not triggered for the following month but a corrective action from the previous month has not been address to closure then the corrective action should still be reported for status until it is closed. Once the corrective action has been completed, a date and result should be entered by the CAM in the log.

AREA 4: ANALYSIS AND MANAGEMENT REPORTS (Guidelines 22-27)

Guideline 24: Identify budgeted and applied (or actual) indirect costs at the level and frequency needed by management for effective control, along with the reasons for any significant variances.

Reviewer Name(s): Jennifer Fortner

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

CAMs were interviewed and ask about the understanding of indirect costs. Although not expertly knowledgeable of the exact steps involved, CAMs were aware that indirect costs are applied to their CAs and that revisions were possible. Most stated that they relied on project controls for understanding if indirect cost changes were to impact the project.

AREA 4: ANALYSIS AND MANAGEMENT REPORTS (Guidelines 22-27)

Guideline 25: Summarize the data elements and associated variances through the program organization and/or work breakdown structure to support management needs and any customer reporting specified in the project.

Reviewer Name(s): Jennifer Fortner

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

Although issues exist that impact this reporting (see CAR-03 for example), it was determined that summarization through the OBS and WBS to management and the customer is taking place. The project provides monthly progress reports to DOE and provides data to PARS-II.

AREA 4: ANALYSIS AND MANAGEMENT REPORTS (Guidelines 22-27)

Guideline 26: Implement managerial action taken as the result of earned value information.

Reviewer Name(s): Jennifer Fortner

Compliant with ANSI/EIA-748: **Yes, but with condition**

Observations and Findings:

The CAMs interviewed prepare variance analysis reports based on thresholds established for the project. The VARs have areas of improvement regarding the application of analysis and resulting managerial action that could be needed (see 5.2 for further detail), based on interviews with the CAMs and discussions with the project manager/project controls, the project does maintain a corrective action log but it is still lacking in implementation. It is difficult to determine if the corrective actions identified in the variance analysis are actually tracked to closure via the log and in some instances an entry in the log exists when no real corrective action was required. When the CAMs were questioned about tracking what is listed in the corrective action area of the VAR they were not sure about how they are tracked and reported each month.

CIO-02*

Subject (Issue): Corrective Action Log Not Effectively Used (CAR-04 FY11)

Referenced Guideline(s): 23, 26

Referenced Data Trace: Examination of VARs and CPRs provided on the docDB for the months of Oct – Jan, Corrective Action Log on docDB, CAM interviews

Description of Issue: Previously, this issue was discussed in the FY11 review under CAR-04. Since the last review, a log has been created but improvements are needed in the mechanics of implementation, awareness of the log, and quality of corrective actions.

Recommendation: Review the process used for the corrective action log and make improvements regarding the traceability from month to month. For example, if no corrective action is required then an entry in the log is not needed. Additionally, if a CA VAR is not triggered for the following month but a corrective action from the previous month has not been address to closure then the corrective action should still be reported for status until it is closed. Once the corrective action has been completed, a date and result should be entered by the CAM in the log.

AREA 4: ANALYSIS AND MANAGEMENT REPORTS (Guidelines 22-27)

Guideline 27: Develop revised estimates of cost at completion based on performance to date, commitment values for material, and estimates of future conditions. Compare this information with the performance measurement baseline to identify variances at completion important to company management and any applicable customer reporting requirements including statements of funding requirements.

Reviewer Name(s): Jennifer Fortner

Compliant with ANSI/EIA-748: **No**

Observations and Findings:

During the CAM interviews, reviews of VARs revealed that not all were adequately reviewing/updating/understanding Estimate At Completion (EAC). Many of the CAMs interviewed understood the general idea behind ETC but were not aware of how ETC is a component of EAC and that it should include pending change request estimates. Another component of EAC (ACWP, depending on the calculation used) was clearly not understood given that most CAMs interviewed had issues with accruals and, therefore, could not explain or agree with either generated EAC values from past months.

CAR-01

Subject (Issue): EAC Not Understood/Used/Owned By CAMs (CAR-01 FY11)

Referenced Guideline(s): 27, applicable to 22 as it pertains to VAC analysis

Referenced Data Trace: Examination of VARs and CPRs provided on the docDB for the months of Oct – Jan, CAM interviews

Description of Issue: Prudent maintenance of the control account-level EAC by the control account manager ensures that the EAC reflects a valid projection of project costs. The EAC reported in the monthly VARs and CPRs has issues with elements of the calculation. In some cases, it is due to accrual issues and in others it lacks input from pending change requests. Last review, the individual CAMs had little, if any, input into or ownership of the monthly EAC analysis. In this review, that did improve regarding ETC but still lacked in overall review/ownership/understanding with regard to change request.

The EAC value and resulting VAC is still not very well understood by CAMs. As identified in CIO*-01, some CAMs have issues with the accrual process which directly impacts the EAC if the calculation of EAC = ACWP + (BAC–BCWP) is being utilized. While some of the CAMs could explain this formula by function, they were not able to agree with the resulting/projected VAC for their CAs.

Recommendation: It is critical that the EAC is properly established and maintained to ensure visibility into resource needs and projected cost trajectory. Accuracy of the variables used to determine the EAC value dictates the usefulness. If a key component of the calculation is inaccurate then misleading information could be given to the CAMs, PM, and Customer. It is recommended that the FRA team provide additional training on the usefulness of the EAC assessment and examine improvements that could be made to the independent variables within the EAC calculation (i.e. including pending change requests in the ETC and correcting accrual issues that are driving incorrect values in the ACWP). It is recommended that the EAC for projects be monitored on a monthly basis to ensure proper updates are made.

2.5 Guideline 28: Incorporate authorized changes in a timely manner, recording the effects of such changes in the budgets and schedules. In the directed effort prior to negotiation of a change, base such revisions on the amount estimated and budgeted to the program organizations.

Reviewer Name(s): Sherese Humphrey

Compliant with ANSI/EIA-748: **No**

Observations and Findings:

The project is aware of the process for implementing change management. This process was successfully communicated by multiple CAMs. However, as discussed under Guideline 31, the project has been implementing changes prior to full authorization. Additionally, the project is not assessing and recording the full effects of change requests; instead, they are assessing fragmented changes that effect specific periods rather than the entire plan (discussed further under Guideline 32).

CAR-02

Subject (Issue): Change requests (CR) are implemented in the baseline prior to final approval (CAR02-2011)

Referenced Guideline(s): 28, 29, 31, 32

Referenced Data Trace: Examination of CRs and corresponding CPRs for October to December 2011.

Description of Issue: Changes to the baseline are occurring prior to formal approval, as evidenced under Guideline 31. Change management documentation is being completed in subsequent months after the change is incorporated into the project baseline.

Recommendation: Process change requests according to FRA's Earned Value System Description and discontinue the process of making changes prior to formal, complete authorization.

AREA 5: REVISIONS AND DATA MAINTENANCE REPORTS (Guidelines 28-32)

Guideline 29: Reconcile current budgets to prior budgets in terms of changes to the authorized work and internal replanning in the detail needed by management for effective control.

Reviewer Name(s): Sherese Humphrey

Compliant with ANSI/EIA-748: **No**

Observations and Findings :

As stated in Guideline 28, the NOvA project is implementing changes prior to full approval. In addition, the NOvA project has updated control account management assignment since the project's inception without formal documentation. These changes have not been formalized utilizing the prescribed change management process. Currently, there is a clear mechanism for handling changes associated with cost, schedule, and scope, but administrative or responsibility changes are not described.

CAR-02

Subject (Issue): Change requests (CR) are implemented in the baseline prior to final approval (CAR02-2011) Administrative changes not part of CR process, e.g., CAM change

Referenced Guideline(s): 28, 29, 31, 32; FRA Procedure – Work Authorization, Section 4.3 Changes to Work Authorization

Referenced Data Trace: Examination of December 2011 and January 2012 Responsibility Assignment Matrix and discussion with updated CAM

Description of Issue: There is no formal description/method in place that tracks administrative/ responsibility changes, i.e., changes to control account manager assignments. For example, the control account manager assignment changed twice within a 2-3 month period with no formal documentation of re-assignment of the control account manager for WBS 1.0.3; 2.0.3.1; 2.0.3.2; 2.0.3.3; and 2.0.3.4. Any changes that impact the responsibility for management of the baseline should be fully documented under the change management procedure and should be documented and processed for approval prior to incorporation of the change in the RAM and other project documentation

Recommendation: Revise the System Description and/or associated procedures to include administrative changes for Control Account Manager assignments into the change management process.

AREA 5: REVISIONS AND DATA MAINTENANCE REPORTS (Guidelines 28-32)

Guideline 30: Control retroactive changes to records pertaining to work performed that would change previously reported amounts for actual costs, earned value, or budgets. Adjustments should be made only for correction of errors, routine accounting adjustments, effects of customer or management directed changes, or to improve the baseline integrity and accuracy of performance measurement data.

Reviewer Name(s): Sherese Humphrey

Compliant with ANSI/EIA-748: **Yes**

Observations and Findings:

Changes are being made to the PMB prior to authorization, however, related to incorporation of retroactive changes to the baseline, there was no evidence found that these changes were being processed to eliminate variances.

AREA 5: REVISIONS AND DATA MAINTENANCE REPORTS (Guidelines 28-32)

Guideline 31: Prevent revisions to the program budget except for authorized changes.

Reviewer Name(s): Sherese Humphrey
Compliant with ANSI/EIA-748: **No**

Observations and Findings:
NOvA project change requests are being processed into the project's baseline prior to full authorization. There were instances where the project manager provided pre-authorization of change requests that exceeded his allowable thresholds. This is in violation of the FRA's EVMS Procedure 12.PM-007, which states that "the project will continue to work to, measure and report progress against the approved baseline until any change request is approved and the baseline changes are incorporated." This practice is in violation of the ANSI Standard Guideline 31 (see below CAR02) and was documented in the FRA EVMS Annual Surveillance Review held March 7-9, 2011.

CAR-02
Subject (Issue): Change requests (CR) are implemented in the baseline prior to final approval (CAR02-2011)

Referenced Guideline(s): 28, 29, 31, 32

Referenced Data Trace: Examination of the changes requests for the October, November, and December 2011 reporting periods, along with the associated CPRs

Description of Issue: The information provided below details changes that were implemented into the PMB prior to execution of the formal change control process.

Reporting Period: December 2011 – the following change requests were incorporated into the project baseline prior to authorization.

- CR467 has an initiation date of February 22, 2012, and a final approval date of February 27, 2012.
- CR469 has an initiation date of February 23, 2012, and a final approval date of March 05, 2012.

Reporting Period: November 2011December 2011 – the following change request were incorporated into the1project baseline prior to authorization.

- CR441 has an initiation date of December 20, 2011, and a final approval date of January 24, 2012.
- CR451 has an initiation date of January 27, 2012, and a final approval date of February 27, 2012.

Reporting Period: October 2011 – the following change request was incorporated into the project baseline prior to authorization.

- CR430 has an initiation date of December 09, 2011, and a final approval date of January 24, 2012.

AREA 5: REVISIONS AND DATA MAINTENANCE REPORTS (Guidelines 28-32)

All of the change requests detailed above were processed into the projects PMB prior to full authorization. The change request form includes an option for the Project Management to indicate his approval and provide the "go-ahead" for incorporation of the change into the baseline prior to complete and full approvals have been obtained. Based on the dates detailed on the respective change requests forms, it would appear that the documentation was an afterthought due to the advanced period of when the change was incorporated into the PMB.

The 2011 EVMS Surveillance Review documented this practice as a CAR and no corrective action was taken to change the practice of pre-approving and incorporating baseline changes into the project baseline prior to formal approval.

Recommendation: Ensure that all change requests being processed have full authorization prior to incorporation into the PMB. Modify the change request and all EVMS documentation (system description and procedures) to eliminate the option of allowing the Project Manager to provide initial approval for change incorporation. Update training procedures to ensure project personnel do not pre-authorize the incorporation of baseline changes prior to formal and full approval.

AREA 5: REVISIONS AND DATA MAINTENANCE REPORTS (Guidelines 28-32)

Guideline 32: Document changes to the performance measurement baseline.

Reviewer Name(s): Sherese Humphrey
Compliant with ANSI/EIA-748: **No**

Observations and Findings :

Based on the interview with the projects control personnel, the reviewers discovered that changes were being incorporated into the project baseline on a fragmented basis, meaning that instead of importing the entire plan into the cost tool for full analysis, only the portion of the schedule affected by that change was imported by the cost professional. An assumption was made that there will be more changes made in the future that would make potential future issues a non-event.

CAR-02

Subject (Issue): Change documentation does not identify full impact to project (CAR02-2011)

Referenced Guideline(s): 28, 29, 31, 32

Referenced Data Trace: Discussions with project control personnel led to the discovery of only fragmented/partial information being imported into the PMB to capture baseline changes resulting in the likelihood that work planned in the future months/years did not include the full impact of the baseline changes

Description of Issue: Project controls informed the review committee that they were not updating the complete PMB when changes were being processed. Instead, project controls would only import the schedule fragment associated with that change, which does not take into account future period impacts. By doing this, the project and other project personnel impacted by the change, are unaware of the complete impacts associated with that change. The integrity of the PMB comes into question with this method of incorporating changes into the baseline because the full cost/schedule impacts are not analyzed. If the change impacts multiple fiscal years, at a minimum, there would be escalation which would have to be applied to account for the schedule impacts. This information is not captured, or documented in the baseline changes.

Recommendation: Project controls should import the entire plan into the cost tool so that analysis can be made on near term impacts, as well as far term activities in the schedule. Though this might be a labor intensive act, it is necessary for all project personnel to understand the cost/schedule impacts to the baseline plan, rather than make assumptions about the future based on potentially incorrect/or incomplete information.

OTHER:

Reviewer Name(s): Julia Chaffin

CIO-04*

Subject (Issue): Training requires reinforcement of policy and procedures.

Referenced Guideline(s): All

Referenced Data Trace: None

Description of Issue:

Current project EVMS training is on-going but seems to be provided on an as-needed basis and at a high-level across the organization. The current EVM training allows gaps to occur by PMs and Project Controls staff due to a possible lack of understanding, awareness and occasional application of any enterprise-wide FRA EVM policies and procedures. This permitted differences in EVMS understanding and/or execution across Control Accounts and within PM/CAM/Project Controls teams. Although not significant enough to warrant an ANSI violation of non-compliance with any particular guideline, the Committee felt the approach FRA takes with training clearly fosters an inconsistent application of the EVMS across project staff. This approach could also indirectly encourage individual project team approaches that, well-intentioned, could lead to gaps that could produce inaccuracies in data or loss of reporting reliability across an entire project timeline and budget.

More specifically, the Committee observed a number of EVMS policy and procedure knowledge gaps during CAM interviews that may warrant revisiting how training is executed and tracked by FRA For example, there appeared an overall lack of understanding of how utilize proper budget and scheduling information in WADs and CAPs; a lack of understanding of the opening and closing process for control accounts and chargeable tasks codes, an uncertainty of terminology such as EAC, Wad, CAP, development of consistent subcontractor flow down requirements for EVMS data reporting across CA's ; and a lack of awareness in FRA EVM policy and procedures focused on consistent and effective project EV assessment utilizing percent complete / schedule of values.

Recommendation:

The Committee recommends that the FRA OPMO implement a comprehensive EVMS training program that is time-driven, documented and focused on all components of the Earned Value Management System. An overall training program could emanate from the OPMO and cover all Earned Value Management System (EVMS) areas, including such granular topics as variance analysis writing, Change Control Process, EAC calculations ensuring consistent and comprehensive approaches to claiming EV performance even with the preponderance of percent complete / schedule of value approaches currently being utilized.

Reviewer Name(s): Cathleen Lavelle

Subject (Issue): System Description Documentation Changes

Referenced Guideline(s): All

Referenced Data Trace: None

Description of Issue:

The FRA EVM System Description currently references DOE Order 413.3A. The FRA contract has been updated to include DOE Order 413.3B.

Incorporate System Description draft changes after review and comment by the project personnel who would be required to implement EVMS on their projects.

Recommendation:

To ensure CAMs are included in the Accrual process of review and approval, update the CAMs responsibility for accruals in system description changes.

Incorporate all System Description changes prior to DOE EVMS Surveillance Review.

APPENDIX A

REVIEW PARTICIPANTS

EVMS Surveillance Review of the
FRA, Fermi National Accelerator Lab
March 12-14, 2012
REVIEW COMMITTEE PARTICIPANTS

Area 1: Organization (Guidelines 1-5), Chair

Cathleen Lavelle, BNL

Area 2: Planning, Scheduling and Budgeting (Guidelines 6-15)

Julia Chaffin, SLAC
Kathleen Bailey, ANL

Area 3: Accounting Considerations (Guidelines 16-21)

Susan Perino, BNL

Area 4: Analysis and Management Reports (Guidelines 22-27)

Jennifer Fortner, ANL

Area 5: Revisions and Data Maintenance (Guidelines 28-32)

Sherese Humphreys, ANL

APPENDIX B

DOCUMENTS REVIEWED

EVMS Surveillance Review of the
FRA, Fermi National Accelerator Lab
March 12-14, 2012
REVIEW COMMITTEE PARTICIPANTS

DOCUMENTS REVIEWED (Oct/Nov/Dec 2011 and Jan 2012)

1. Current detailed project schedules, milestone schedules and critical path schedules for the NOvA project.

2. Project Execution Plan and Project Management Plan for NOvA project.

3. Project Change Request documentation.

4. FRA EVMS Description and Procedures

5. Control Account Plans (CAPs).

6. Work Authorization Documents (WADs).

7. Contract Performance Reports (CPRs) Format 1 and Format 2.

8. Argonne Cost Accounting Disclosure Statement.

9. Overhead budget reports.

10. Contingency, MR and Change Control logs.

APPENDIX C

Review Agenda

Agenda for Earned Value Management System Surveillance Review

March 12th-14th, 2012

Earned Value Management System Surveillance Review
Fermilab Research Alliance, LLC (FRA)
Fermi National Accelerator Laboratory (FNAL),
Wilson Hall One North (WH1N)
March 12th-14th, 2012

PURPOSE:

This will be a formal review of the FRA EVMS Earned Value Management System (EVMS) implemented at FNAL. Discussions will occur and interviews will be performed to determine how the current EVMS works and its implementation across all of FNAL (including such information as accounting, procurement, software tools and interfaces, scheduling, cost estimating, reporting, Control Account Managers (CAMs), work authorization, etc). The outcome of this meeting will be a formal assessment of the FRA EVMS by an independent review team, including corrective actions and continuous improvements.

AGENDA

Monday - March 12					
start	end	Subject	Session	Team Members	Location
8:00 AM	9:00 AM	Review Team In-room Setup and Discussions	CLOSED	Review Team	WH1N
9:00 AM	11:00 AM	Welcome / In-Brief / Review (S. Henderson, Directorate) EVMS Description and Procedures Overview (D. Hoffer) NOvA Overview (J. Cooper)	OPEN		WH1N
11:00 AM	12:00 PM	Working Lunch / Team Discussions	CLOSED	Review Team	
12:00 PM	1:30 PM	Interview 1 - Phil Schlabach (W.Freeman/H. Brown)	CLOSED	Review Team	WH1N
12:00 PM	1:30 PM	Accounting/Finance/Buget Interview - M.Rhoades, C.Conger, D.Keiner, S.Saxer	CLOSED	Cathy & Sue	WH2NW
1:30 PM	1:45 PM	team discussion / travel	CLOSED	Review Team	
1:45 PM	3:15 PM	Interview 2 - Ken Heller (W. Freeman)	CLOSED	Review Team	WH1N
3:15 AM	3:30 AM	team discussion / travel	CLOSED	Review Team	
3:30 AM	5:00 PM	Interview 3 - Leon Mualem (S. Saxer/C. Vendetta)	CLOSED	Review Team	WH1N
5:00 PM	6:00 PM	Review Team Meeting	CLOSED	Review Team	
6:00 PM	6:15 PM	Daily Out-Brief (informal)	OPEN		WH1N

Tuesday - March 13					
start	end	Subject	Session	Leader	Location
8:00 AM	8:30 AM	Review Team Preparation	CLOSED	Review Team	
8:30 AM	10:00 AM	Interview 4 - Stuart Mufson (H. Ferguson)	CLOSED	Review Team	WH1N
10:00 AM	10:15 AM	team discussion / travel	CLOSED	Review Team	
10:15 AM	11:45 AM	Interview 5 - Pat Lukens (W. Freeman)	CLOSED	Review Team	WH1N
12:00 PM	1:00 PM	Working Lunch / Team Discussions	CLOSED	Review Team	
1:00 PM	2:30 PM	Interview 7 - John Cooper	CLOSED	Review Team	John's Office
1:00 PM	2:30 PM	Project Controls Trace	CLOSED	Review Team	WH1N
2:30 PM	6:00 PM	Review Team Meeting	CLOSED	Review Team	
5:30 PM	5:45 PM	Daily Out-Brief (informal)	OPEN		

Wednesday - March 14					
start	end	Subject	Session	Leader	Location
8:00 AM	10:30 AM	Data Traces/ Team Discussion / Report Prep			
10:30 AM	11:00 AM	Out-Brief	OPEN		WH1N
11:00 AM	12:00 PM	Working Lunch / Team Discussions			