1.0 purpose

This document describes change control procedures for projects managed under the PPPL Project Management System Description (PMSD). The change control procedure is documentation of changes to a project’s budget and/or Performance Measurement Baseline (PMB), including scope, budget and/or schedule, and parameters. Changes are controlled to maintain the integrity of the project baseline. Changes shall not be authorized to mask cost or schedule variances.

**2.0 SCOPE**

The scope, schedule and cost baseline for a project is formally established in the Project Execution Plan (PEP). For EVMS projects, the PMB is of particular change control significance, in that it is the total time-phased budget plan against which project performance is measured. It depicts the time-phasing for expenditure of the resources allocated to accomplish program scope and schedule objectives and is formed by the budgets assigned to control accounts and summary-level planning packages, and any undistributed budget. The PMB does not include contingency or management reserve. The project’s budget consists of the PMB, contingency, and management reserve. Revisions to the PMB may affect the project’s key parameters, such as the project schedule, milestones, and budget-at-completion (BAC).

The Change Control Board (CCB), as defined in the Project Execution Plan (PEP), is a committee consisting of key individuals representing the PPPL project team, PPPL management, and DOE (or other customer), who determine the merit of incorporating proposed changes to the project baseline. The CCB is responsible for approving all Engineering Change Proposals (ECPs) above the thresholds prescribed in the PEP.

3.0 REFERENCES

**3.1** DOE Order 413.3B, “Program and Project Management for the Acquisition of Capital Assets”

**3.2** PPPL Project Management System Description (PMSD).

**3.3** PM Procedure 1.2, Project Work Breakdown Structure (WBS)

**3.4** PM Procedure 1.5, Control Account Plan/Work Authorization

**3.5** PM Procedure 1.6, Project Schedule

**3.6** PM Procedure 1.7, Cost Estimating

4.0 PROCEDURE

The sequence of activities involved in this procedure is illustrated in Appendix A. The sequential action steps of the process are described below.

**4.1 BCP Initiation**

**4.1.1 Change Proposed**

When a PPPL Job Manager (AKA. Control Account Manager (CAM)) observes or is presented with a potential scope, schedule, or budget change the Job Manager will notify the Project Manager. The Job Manager works with Project Controls to define the impacts of the proposed change. The Job then submits a change, using an ECP form, to the Project Manager. Project Controls maintains the project ECP Log generates an ECP number and summarizes the schedule and/or budget impact of the proposed change.

**4.1.2 Subcontracted Effort**

If a control account includes the oversight of a subcontract (e.g., architect/engineer services, construction effort), the Project Manager may authorize the Job manager to process changes to the subcontract using contract change methodology, in addition to the formal ECP process. A log of all subcontract changes will be maintained by the Job Manager, or their designee, and made available to the Project Manager and Project Controls. The Project Manager and Project Controls will review subcontract changes with the Job manager to ensure these changes are consistent with the PPPL EVMS change control practices and that the Estimate to Complete (ETC) amount reflects all known changes.

**4.1.3 ECP Package Preparation**

The Job Manager works with Project Controls to prepare an accurate and complete ECP package. The ECP contains the documentation necessary to support proposed budget and/or schedule change(s). Each ECP must:

* Show the affected WBS element, the level and complexity of the change.
* Be reviewed for consistency, completeness, correctness, and appropriate routing by Project Controls before submittal to the CCB.

ECPs may be prepared using standard templates and formats created for the project.

**4.1.3.1 Reason/Justification**

The driver of change falls into one of the following categories:

* Scope Change: This is an addition, deletion, or transfer of work scope to/from a body of formally authorized work represented in one or more control accounts. These occur as external, contract-level changes, or internal, Job level changes.
* Budget Change: The budget of a given element of authorized work is newly estimated to be different than the budget originally associated with that work. In such as case, there have been no changes in requirements or objectives of the work. Typically, there are no activities added to or deleted from the project schedule.
* Schedule Change: Project priorities or unforeseen events may result in re-sequencing of project activities causing a change in the timing and/or definition of controlled or earned value milestones.

**4.1.3.2 Consequence of Not Approving**

The Job Manager shall include an impact assessment on the ECP explaining the consequence of not approving the ECP.

**4.1.3.3 Budget Source Impact**

The Project Manager, with the assistance of Project Controls, shall attach a cost impact statement to the ECP package when budget is requested, returned, and/or transferred. This statement shows the financial impact of the proposed change by project ID and by job. This is relevant when contingency is requested/returned or when budget (and scope) is transferred from one control account to another. This information shall be reflected on the ECP form and entered in the ECP log when a log number is obtained. When scope is moved between Jobs or in the schedule, the corresponding budget will accompany it, resulting in a scope and budget transfer.

**4.1.3.4 Schedule/Contract Milestone Impact Statement**

The Project Manager, with the assistance of Project Controls, shall provide a copy of the schedule to reflect the Level 1 through 4 milestones that are affected if the ECP requires a milestone revision.

Proposed schedule revisions shall be indicated in attached schedule copies provided by Project Controls to reflect the pending milestone and date changes with “before” and “after” versions. These will be entered into baseline schedule if/when the action is approved.

**4.1.3.5 Contingency/Management Reserve Requirement**

The Project Manager, with support from Project Controls, shall indicate if the impact of the change will result in a request for expenditure of project contingency/management reserve. If contingency is requested, the Project Manager shall prepare the ECP for approval. Rules/thresholds for the use of contingency/management reserve are defined in the Project Execution Plan (PEP). The Budget is transferred from the contingency/management reserve account in the event of an in-scope, unbudgeted change.

**4.1.3.6 WBS Affected**

The Job Manager shall indicate the Work Breakdown Structure (WBS) elements affected as a result of the change. If the change will impact other control accounts, the Job Manager shall notify the other affected Job Managers to insure all issues are brought forward prior to approval of the change.

**4.2 Disposition of ECP**

The Job Manager should obtain signatures from Project Controls. Then the Job Manager submits the ECP to the CCB with the proper authority, as defined in the PEP. The ECP can be approved, approved with changes, disapproved, or returned for revisions.

**4.2.1 ECP Approval/Disapproval Processed**

Once an ECP is either approved or disapproved, the ECP log shall be updated by the Project Manager and filed in numerical order, with a copy to Project Controls.

**4.2.2 PMB Updates**

The Job Managers must work with Project Controls to update all affected WAFS and Project documents that reflect scope, schedule, and budget information and assure that these updates are consistent with the approved ECP. This must be accomplished in a timely manner, typically within 30 days, and preferably within the same reporting period. Once done, Project Controls will complete the ECP log to indicate when the updates were made and by whom.

**4.3 Documents and Records**

Certain project documents are considered “Controlled Documents” in order to protect the integrity of the PMB and budget base, and to ensure that all project participants are aware of the latest official versions. Changes to these controlled documents will be formally approved by the Project Manager, signed and dated, and the description of the change recorded. The revision log in the front of each document will be used for this purpose. Controlled documents will be reissued to project participants and selected stakeholders within 30-days of an authorized change. When reissue of revised documents is accomplished by posting to an approved project web site, participants will be informed of the change. Controlled documents for EVMS purposes are, as a minimum: the PEP and its component sections, to include the baseline scope, schedule, performance measurement baseline, WBS (to include the listing of all control accounts and associated budgets), WBS Dictionary, and key milestones. The Contingency Log will also be a controlled document.

Documents and records generated as a result of implementing this procedure shall be generated in a manner suitable for reproduction and shall be signed and dated at the time of completion. The Project Manager shall retain the official, signed documents. Project Controls shall retain approved electronic copies.

The formats shown below as Appendices B and C are suggested formats. If projects elect to use other formats, as a minimum they must contain the information shown in the formats below. Whatever format is used by the project, the format must be used consistently within the project.

5.0 Appendix

**5.1 Appendix A:** Change Control Flow Diagram

**5.2 Appendix B:** Engineering Change Proposal (ECP) Form - Sample

**5.3 Appendix C:** Engineering Change Proposal (ECP) Log - Sample



**APPENDIX B**

ENGINEERING CHANGE PROPOSAL (ECP) FORM - Sample

Change Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Change Originated By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date Submitted: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WBS Element and Job Number (AKA CA) : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| Change Description: |
| Change Justification: |
| Schedule Change (current and revised milestone dates): |
| Budget Change Description: |
| Impact of Non Approval: |
| ECP Level: |
| Level 0 (DOE-SAE) 🞏 Level 1 (DOE-FES) 🞏 Level 2 (DOE-PSO) 🞏 Level 3 (PPPL) 🞏 |

Disposition/Description of Action Authorized by CCB:

**APPENDIX B (cont’d.)**

ENGINEERING CHANGE PROPOSAL

|  |  |  |
| --- | --- | --- |
| Approvals: |  |  |
| Project Manager: |  |  |
|  | (Name) | (Date) |
| Project Director: |  |  |
|  | (Name) | (Date) |
| Program Director for Scientific Program: |  |  |
|  | (Name) | (Date) |
| Federal Project Director: |  |  |
|  | (Name) | (Date) |
| PSO Manager |  |  |
|  | (Name) | (Date) |

Copies:

File:

**APPENDIX C**

ENGINEERING CHANGE PROPOSAL (ECP) LOG - Sample

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| *BCP* | *WBS* | *Control Account* | *Description of Change* | *Date* | *Level* | *In $K* |
|  |  |  |  |  |  |  |
| 001 |  |  |  |  |  |  |
| 002 |  |  |  |  |  |  |
| 003 |  |  |  |  |  |  |
| 004 |  |  |  |  |  |  |
| 005 |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |
|  |  |  | Total Cost of Changes |  |  | 0 |
|  |  |  |  |  |  |  |
|  |  |  | Original Baseline Contingency |  |  | 0 |
|  |  |  | Changes |  |  | 0 |
|  |  |  | Remaining Contingency |  |  | 0 |
|  |  |  |  |  |  |  |

cc: