

Executive Session

Director's Independent and CD-2/3 Review of CMS Detector Upgrade Project May 28-30, 2014

Jennifer Fortner

Agenda for Exec Session

- Charge
- Typical CD-2/3 Documents
- Review Agenda
- Subcommittee Assignments
- Reviewer Writing Assignments
- Reporting Structure
- Discussion

Charge (excerpts)

The Committee is to conduct a Director's Independent Design and CD-2/3 Review of the LHC Compact Muon Solenoid (CMS) Detector Upgrade Project to assess if the Project meets the Critical Decision (CD) 2/3 (CD-2, Approval of Performance Baseline and CD-3, Approve to Start Construction) requirements as specified in DOE O 413.3B. The LHC CMS Detector Upgrade Project received CD-1 approval on October 10, 2013. The Project is scheduled for a DOE CD-2/3 Review on August 5-7, 2014.

The review committee will assess the level of maturity of the Project's design. To meet the requirements for CD-2 the design has to be at the preliminary level or greater, and for CD-3 the design has to be at the level of final or near final design. The committee will make their assessment based on the LHC CMS Detector Upgrade Project's Technical Design Report (TDR), drawings, specifications, and discussions with the project team.

Charge (Continued)

The review committee will focus on the Project's CD-2/3 readiness including assessing the technical scope as well as the cost, schedule and management areas. ... The committee will evaluate the current schedule, taking risks into consideration, and determine if the Project's scope of work can be accomplished within the approved Total Project Cost (TPC) by the CD-4 date. The committee is to assess if the Project team is in place to implement full construction while providing monthly statusing progress reports to DOE and Lab Management on cost/schedule against the Project plan. The committee will also assess and confirm that ESH&Q has been adequately addressed.

... The Committee is to assess the Project's progress on addressing the recommendations from these prior reviews and assessments.

The review committee is asked to address questions to assess the Project's progress

Typical CD-2/3 Documents

- Acquisition Strategy
- Project Execution Plan
- Project Management Plan
- Project Organization Chart
- Final Design Requirements Established
- Technical Design Report (TDR)
- Hazards Analysis Report (HAR)
- Integrated Safety Management Plan
- Issue final National Environmental Policy Act (NEPA) determination
- Quality Assurance Plan (QAP)
- Configuration Management Plan
- Procurement Management Plan
- Established Cost and Schedule Performance Management Baseline (PMB)
- Risk Management Plan
- Risk Register & Assessment
- Resource Loaded Schedule
- Resource Profile Graphs
- Assumptions Document
- WBS Dictionary
- Milestone Dictionary
- BOEs w/reference documents
- Monthly Status Reports

Typical CD-2/3 Documents

(continued)

- Scope Contingency Plan (potential adds and removals)
- Lifecycle Costs with Alternative Assessment
- Memos of Understanding (MOUs) / Statement of Work (SOWs)
- Science & Technical Requirements and Specifications

Documentation to demonstrate EVMS Compliance

Organization

- Project WBS
- Project Organization Chart
- Responsibility Assignment Matrix (RAM) with Dollars & % LOE by CA
- Project Execution Plan & Project Management Plan
- DOE CD Approval Documents
- CA Plan – Work Authorization Docs

Planning, Scheduling, & Budgeting

- Performance Baseline Document
 - Scope – WBS Dictionary
 - Schedule – Summary & Detailed Schedule
 - Cost Baseline – Cost Plan by Fiscal Year (includes BOE, Assumptions)
- Risk Management Plan
- Risk Registry & Analysis

Documentation to demonstrate EVMS Compliance (continued)

Accounting Considerations

- Sponsor Work Authorization (same as DOE CD approval documents)
- Finance Charge Code Mapping to WBS (may be part of RAM)

Analysis & Management Reports

- Variance Threshold Table
- Monthly Performance Reports - (3 months preferred)
- Cost Performance Reports by CA (3 months preferred)

- Variance Analysis Reports - (3 months preferred)
- EAC Analysis (Yearly, Monthly)
- Corrective Action Log

Revisions & Data Maintenance

- Baseline Change Control Log
- Baseline Approved Changes – (3 months)
- Contingency & MR Log

Agenda

Wednesday, May 28

EXECUTIVE SESSION – Comitium (WH2SE)

8:00 – 8:45 AM 45 Executive Session

PLENARY SESSION – Curia II

8:45 – 8:55	AM	10	Welcome	Nigel Lockyer
8:55 – 9:45	AM	50	Project Overview & Conceptual Design	Steve Nahn
9:45 – 10:25	AM	40	WBS 401.03 FPIX	Will Johns

10:25 – 10:40 AM 15 BREAK

10:40 – 11:20	AM	40	WBS 401.02 HCAL	Jeremy Mans
11:20 – 12:00	AM	40	WBS 401.04 Trigger	Wesley Smith

12:00 – 1:00 PM 60 LUNCH – Tables available on WH2XO

PARALLEL BREAKOUT SESSIONS - Comitium (WH2SE)

1:00 – 2:45 PM 105

Session 1: WBS 401.01 Project Management – Comitium (WH2SE)

Session 2: WBS 401.02 HCAL – West Wing (WH10NW)

Session 3: WBS 401.03 FPIX – Sunrise (WH11NE)

Session 4: WBS 401.04 Trigger – The Black Hole (WH2NW)

Agenda continued

2:45 – 3:00 PM 15 BREAK

PARALLEL BREAKOUT SESSIONS - continued

3:00 – 4:45 PM 105

Session 1: WBS 401.01 Project Management – Comitium (WH2SE)

Session 2: WBS 401.02 HCAL – West Wing (WH10NW)

Session 3: WBS 401.03 FPIX – Sunrise (WH11NE)

Session 4: WBS 401.04 Trigger – The Black Hole (WH2NW)

4:45 – 5:30 PM Subcommittee Executive Sessions – in Breakout Rooms

5:30 – 6:30 PM Full Committee Executive Session – Comitium (WH2SE)

Thursday, May 29

PARALLEL BREAKOUT SESSIONS - continued

8:00 – 9:45 AM 105

Session 1: WBS 401.01 Project Management – Comitium (WH2SE)

Session 2: WBS 401.02 HCAL – West Wing (WH10NW)

Session 3: WBS 401.03 FPIX – Sunrise (WH11NE)

Session 4: WBS 401.04 Trigger – The Black Hole (WH2NW)

9:45 – 10:00 AM 15 BREAK – Comitium (WH2SE)

Agenda continued

PARALLEL BREAKOUT SESSIONS - continued

10:00 – 11:45 AM 105

Session 1: WBS 401.01 Project Management – Comitium (WH2SE)

Session 2: WBS 401.02 HCAL – West Wing (WH10NW)

Session 3: WBS 401.03 FPIX – Sunrise (WH11NE)

Session 4: WBS 401.04 Trigger – The Black Hole (WH2NW)

11:45 – 12:45 AM 60 LUNCH – Comitium – Tables available on WH2XO

12:45– 1:45 PM 60 Response to reviewer questions from Day One and questions from the morning breakout sessions – Comitium (WH2SE)

1:45 – 3:30 PM 105 Subcommittee Executive Session/Report writing – **in Breakout Rooms**

3:30 – 3:45 PM 15 BREAK – Comitium (WH2SE)

3:45 – 5:00 PM 75 Full Committee Executive Session/Report writing - Comitium (WH2SE)

Agenda continued

Friday, May 30

8:00 – 10:00	AM	120	Committee Report Writing - Comitium (WH2SE)
10:00 – 10:30	AM	15	BREAK – Comitium (WH2SE)
10:30 – 1:30	AM	135	Full Committee Executive Session Dry Run With Working Lunch - Comitium (WH2SE)
1:30 – 2:30	PM	60	Closeout Presentations – Curia II (WH2SW)
2:30	PM		Adjourn

Reviewer Subcommittee Breakout Assignments

Breakout Sessions	Reviewers
1. Project Management – Comitium (WH-2SE)	John Anderson* Jim Curley – Observer* Jennifer Fortner Marc Kaducak Amber Kenney – Observer* Richard Marcum – Observer* Elaine McCluskey Elmie Peoples-Evans* Kathy Zappia*
1. HCAL (WBS 401.04) - West Wing (WH10NW)	Dmitri Denisov Adam Gibson Jose Repond
1. FPIX (WBS 401.02) - Sunrise (WH11NE)	Jim Brau Kevin Einswieler Hartmut Sadrozinski
1. Trigger (WBS 401.03) – Black Hole (WH2SE)	Sarah Dermers Eric James Jonathan Lewis

*Cost/Schedule and ESH&Q Reviewers will rotate between breakouts

Reviewer Writing Assignments

Executive Summary	<u>Jennifer Fortner</u>
1.0 Introduction	
2.0 Technical	
2.1 Hadron Calorimeter - HCAL	<u>Dmitri Denisov</u> * Adam Gibson Jose Repond
2.2 Silicon Pixel Detector - FPIX	<u>Jim Brau</u> * Kevin Einswieler Hartmut Sadrozinski
2.3 Level 1 Trigger	<u>Eric James</u> * Sarah Demers Jonathan Lewis
3.0 Cost and Schedule	<u>Elmie Peoples-</u>
3.1 Cost	<u>Evans</u> *
3.2 Schedule	Jim Curley Richard Marcum
4.0 ESH&Q	<u>John E Anderson</u> * Kathy Zappia Amber Kenney
5.0 Management	<u>Elaine McCluskey</u> * Marc Kaducak

Note: * Indicates Subcommittee Lead and integrator of write-ups
Underlined names are the primary writer.

Reviewer Writing Assignments (continued)

6.0 Charge Questions	
6.1 Is the Project's design appropriately developed and well documented in their Technical Design Report (TDR)? Does the design satisfy the Project's performance requirements to carry out the scientific mission? Is the final design sufficiently mature so that the Project can start construction? For those elements of the design that are not finalized, has the Project shown there are no major issues that need to be addressed and that they are on a clear path to a final design?	<u>Dmitri Denisov</u> All
6.2 Has the Project developed a resource loaded schedule that includes the Project's scope of work and is achievable?	<u>Jim Curley</u> All
6.3 Does the Project have credible cost and schedule estimates? Do they include adequate scope, cost and schedule contingency?	<u>Elmie Peoples-Evans</u> All
6.4 Has the Project documented the Basis of Estimate (BOEs) that supports the baseline cost and schedule presented?	<u>Elmie Peoples-Evans</u> All
6.5 Is the scope of work clearly defined between what is funded by DOE or NSF, and is this reflected in the cost, schedule and risk assessment presented to the committee?	<u>Richard Marcum</u> All
6.6 Has the Project implemented risk management by identifying risks, performing a risk assessment (qualitative and quantitative) and developing mitigation plans?	<u>Elaine McCluskey</u> All

Note: * Indicates Subcommittee Lead and integrator of write-ups
Underlined names are the primary writer.

Reviewer Writing Assignments (continued)

6.7 Is CD-4 achievable with the Project's risks and within the DOE approved Total Project Cost?	<u>Elaine McCluskey</u> All
6.8 Has the Project updated required project management documents per DOE Order 413.3B for CD-2/CD-3 and per the Fermilab Project Management System?	<u>Marc Kaducak</u> All
6.9 Are the Project organization and staffing levels adequate to manage the work to get to CD-4?	<u>Elaine McCluskey</u> All
6.10 Are the ESH&Q aspects being properly addressed?	<u>John E Anderson</u> All
6.11 Does the Project's process for monthly statusing and reporting satisfy DOE and Laboratory requirements?	<u>Marc Kaducak/</u> <u>Elmie Peoples-Evans</u> All
6.12 Has the Project addressed the recommendations from the DOE CD-1 Review, the Director's CD-1 Review, the Independent Conceptual Design Review and the Director's Cost and the Schedule Assessment?	<u>Marc Kaducak</u> All
6.13 Is the CMS Upgrade Project ready for a DOE CD-2/3 review in August?	<u>Jennifer Fortner</u> All

Note: * Indicates Subcommittee Lead and integrator of write-ups
Underlined names are the primary writer.

Reporting Structure

- Results of the review are to be documented as findings, comments, and recommendations.
- The answers to the charge questions are to include feedback from each subcommittee.
- Any additional actions required to be completed by the project team to acceptably address the review charge are to be documented as Recommendations.
- Findings, Comments , Recommendations and answers to the questions are to be presented in writing at a closeout with CMS Detector Upgrade and Fermilab's management.

Findings, Comments, and Recommendations

- Findings
 - Findings are statements of fact that summarize noteworthy information presented during the review.
- Comments
 - Comments are judgment statements about the facts presented during the review. The reviewers' comments are based on their experiences and expertise.
 - The comments are to be evaluated by the project team and actions taken as deemed appropriate.
- Recommendations
 - Recommendations are statements of actions that should be addressed by the project team.
 - A response to the recommendation is expected and that the actions taken would be reported on during future reviews.

Reviewer Write-ups

- Write-up Closeout Template is posted on Director's Review Webpage.

[Add link](#)

- Write-ups (including answers to charge questions) are to be sent to Lisa Temple at ltemple@fnal.gov prior to 10:00 AM on Friday, May 30 for the Closeout Dry Run starting at 10:30 AM in the Comitium
- A final report will be issued within 2 weeks after the closeout.

Discussion

- Questions and Answers