



Fermilab

MINERvA Working Group Meeting

November 15 2005

1:30 – 3:00 PM

Snake Pit

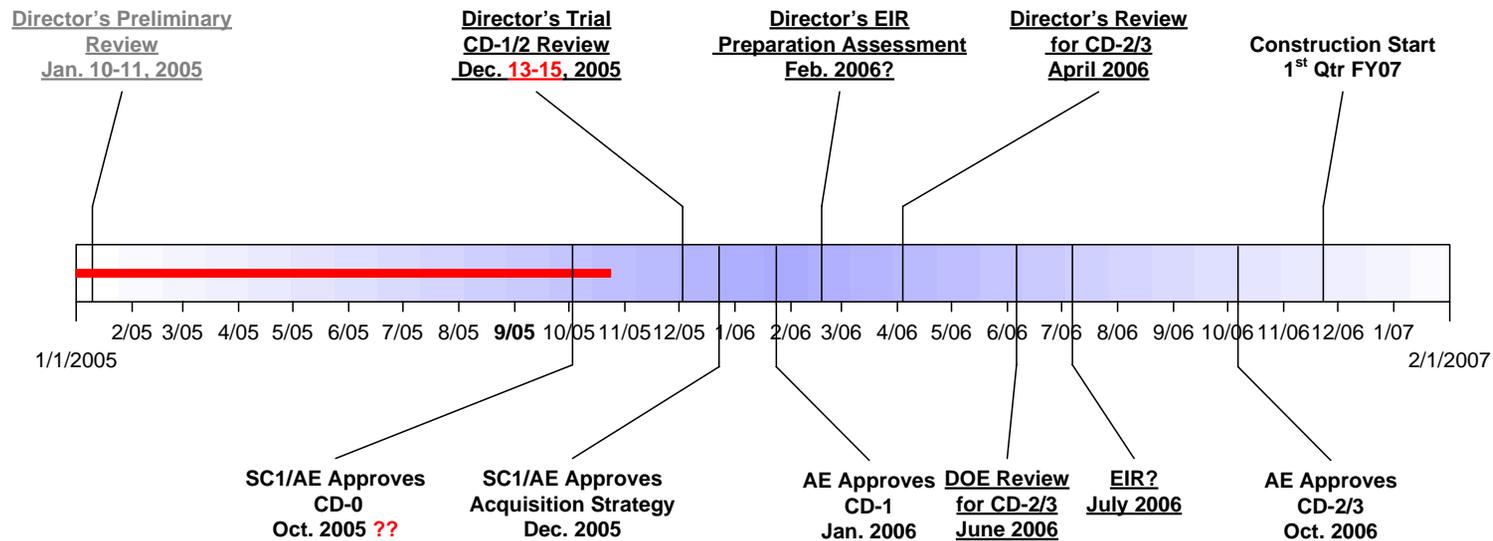
Agenda

- 1) Feedback on interchanges between the Directorate and OHEP [Mont]
- 2) Discuss MINERvA Timeline[Ed]
- 3) Discussion of preparations for Directors CD-1 Review [Ed]
 - a) Presentations [Debbie]
 - b) Resource Loaded Schedule [Nancy, TJ]
 - c) Cost estimates [Nancy]
 - d) Review Webpage (talks, schedule material, cost material, CDR, other reference materials) [Debbie]
 - e) CD-1DOE Documentation (PMP, PEP, Acquisition Strategy) [Dave]
- 4) Discuss and Agree on date for next WGM. 23-Nov to be moved because of unavailability of attendees because of Thanksgiving. (Potential date 29-Nov.) [Dean]
- 5) Status of Open Action Items from 01-November meeting:



DRAFT MINERvA Project Timeline for Critical Decisions & Reviews

Updated 24-Oct-05



Note:
Items marked in Red indicates change from prior version



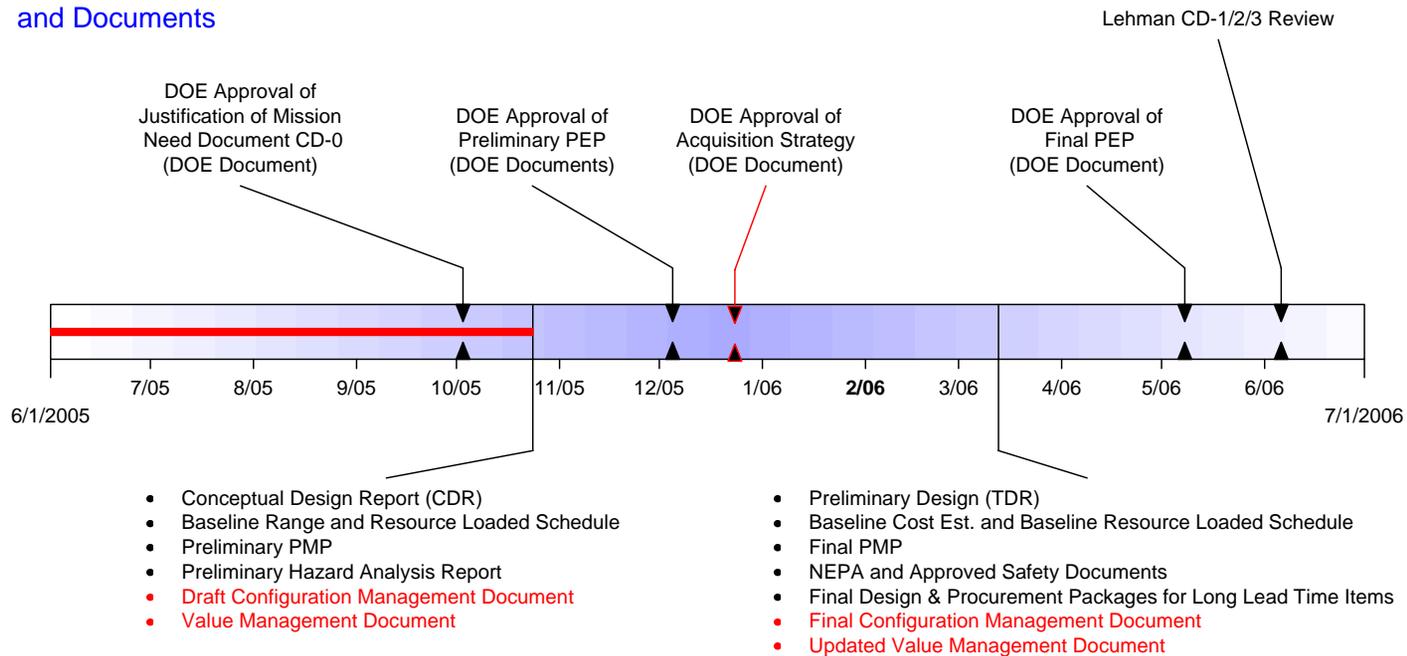
MINERvA Project

Draft Critical Design Prerequisites

Updated 15-Sep-05



Estimated Need by Dates for DOE Approvals and Documents



Target Completion Dates for MINERvA Documents

Note:
Items marked in Red indicates change from prior version

Review Charge

This charge is for the Committee to conduct a Director's CD-1 / Trial CD-2 Review of the proposed MINERvA project at Fermilab. The review is to assure that all the requirements have been met for DOE to approve CD-1 and to assess and comment on the level of readiness of the project to meet the CD-2 requirements. As part of this assessment the questions listed in Attachment 1 of this charge should be addressed. Additionally the review committee is to review and comment on Project's response and actions taken on the recommendations from the Director's Preliminary Review of MINERvA on January 10-11, 2005. Constructive comments on presentation content, format, and style are also requested.

Approval of CD-1 by DOE officials is based on a *Conceptual Design* for the project, a *cost and schedule baseline range*, and some additional project management documents. The technical part of the review will focus on the conceptual designs for the Detector. It will answer the questions, **will these designs meet the requirements and specifications and are the designs sound.** *The cost and schedule ranges are usually based on a detailed WBS – Work Breakdown Structure, WBS Dictionary, BOE – Basis of Estimate documentation, risk and contingency analyses, RLS – Resource Loaded Schedule, and time phased funding and cost profiles. The committee is asked to review each of these items, for quality, completeness, and accuracy.* Furthermore, the committee is asked to *review and assess the quality of and comment on the additional formal project management documentation required for CD-1 approval.*

Review Charge (cont.)

Fermilab and MINERvA are planning for CD-2/3 approval to allow construction to start the first quarter of FY2007. To achieve this goal MINERvA will need a DOE CD-2/3 Review in the summer of 2006. Therefore, the committee is asked to *comment as appropriate on MINERvA's status regarding readiness to "establish a baseline budget."* Again, appropriate constructive comments on what remains to be done are requested.

Finally, the committee should present findings, comments, and conclusions at a closeout meeting with MINERvA's and Fermilab's management and provide a written report soon after the review.

Charge for the Director's CD-1/(2) Review of the MINERvA Project
Attachment 1

Technical

- Are the physics requirements clearly stated and documented?
- Have these physics requirements been translated into technical performance requirements / specifications?
- Have alternative designs been considered and reasons for selecting one alternative over another documented and deemed reasonable?
- Can the design be built? Does the design meet the technical specifications? Is it a reasonable design?

Review Charge (cont.)

Cost

- Is the Work Breakdown Structure (WBS) appropriate for the project scope?
- Do the cost estimates for each WBS (or cost) element have a sound documented basis and are they reasonable?
- Does an obligation profile exist?

Schedule

- Is the schedule well developed and resource loaded?
- Are the activity durations reasonable for the assumed resources?
- Is the schedule duration feasible for the resources assigned to accomplish the tasks?
- Does the schedule contain appropriate levels of milestones, sufficient quantity of milestones for tracking progress and do they appear to be achievable?
- Does the schedule include activities for design reviews, which include assessment of the designs readiness for procuring prototypes, preproduction and production materials?

Management

- Is there an appropriate management organizational structure in place to accomplish the design and construction?
- Is the organization structure well documented, responsibilities defined and appropriate for the scope of work?
- Are there adequate staffing resources available or planned for this effort?
- Is there a funding plan available or proposed to meet the resource requirements to realize the project?
- Has a Risk Assessment been performed, mitigations identified, actions taken and do they seem appropriate?

Draft Review Agenda

Tuesday, December 13, 2005 – Presentations are in the Racetrack (WH7X)

8:00 – 8:45 AM		Executive Session (Comitium-WH2SE)	Ed Temple
9:00 – 9:15 AM	15	Introduction	Hugh Montgomery
9:15 – 9:45 AM	30	Physics Requirements Overview	Jorge Morfin
9:45 – 10:15 AM	30	Detector Overview	Kevin McFarland
10:15 – 11:00 AM	45	Project Overview	Debbie Harris
11:00 – 11:15 AM	15	BREAK	
11:15 – 11:45 AM	30	WBS 1: Scintillator Extrusions	Anna Pla-Dalmau
11:45 – 12:15 PM	30	WBS 2 & WBS 4: WLS Fiber and Clear Fiber Cables	Howard Budd
12:15 – 12:45 PM	30	WBS 3: Scintillator Plane Assembly	Jeff Nelson
12:45 – 1:45 PM	60	LUNCH (WH2X)	
1:45 – 2:15 PM	30	WBS 6: PMT Acquisition and Testing	Ioana Niculescu
2:15 – 2:45 PM	30	WBS 5: PMT Boxes and Light Injection	Tony Mann
2:45 – 3:15 PM	30	WBS 7: DAQ and Electronics	Vittorio Paolone
3:15 – 3:30 PM	15	BREAK	
3:30 – 4:00 PM	30	WBS 8: Outer Detector Frame, Absorbers, Stand	Jim Kilmer
4:00 – 4:30 PM	30	WBS 9: Module Assembly	Robert Bradford
4:30 – 5:00 PM	30	(WBS 11): Installation & Infrastructure	Jim Kilmer
5:00 – 6:30 PM	90	Executive Session	

Draft Review Agenda (cont.)

Wednesday, December 14, 2005 (Morning break will be available outside Comitium at 10:30)

8:00 – 8:30 AM	30	Cost Executive Session (Comitium – WH2SE)	Ed Temple
		Breakout Sessions	
8:30 – 12:30 PM		<ul style="list-style-type: none"> WBS 1, 2 & 4 Scintillator & Fiber (Snake Pit – WH2NE) 	Anna Pla-Dalmau, Howard Budd
8:30 – 12:30 PM		<ul style="list-style-type: none"> WBS 3, 8 & 9 Module/Plane, Detector Parts Assembly (Black Hole – WH2NW) 	Jeff Nelson, Jim Kilmer, Robert Bradford, Ron Ransome
8:30 – 12:30 PM		<ul style="list-style-type: none"> WBS 5, 6 & 7 PMT's, PMT Boxes and Electronics & DAQ (Racetrack – WH7X) 	Ioana Niculescu, Tony Mann, Casper, Paolone
9:30 – 12:30 PM		<ul style="list-style-type: none"> WBS 10 Management/Cost/Schedule/ WBS 11 I&I (Comitium WH2SE) 	Debbie Harris, Nancy Grossman, TJ Sarlina, Sheri Landrud
12:30 – 1:30 PM		LUNCH (WH2X)	
1:30 – 2:30 PM		MINERvA's response to review committees questions	Kevin McFarland, Jorge Morfin
2:30 – 4:00 PM		Executive Session	
4:00 PM		Report Writing	

Draft Review Agenda (cont.)

Thursday, December 15, 2005

8:00 – 10:00 AM	Continue Report Writing	
10:00 – 2:30 PM	Closeout Dry Run with working lunch (Comitium, WH2SE)	
2:30 PM	Closeout (Racetrack – WH7X)	

List of Confirmed Reviewers

- Mike Crisler
- Hogan Nguyen
- Marc Kaducak
- Joe Howell
- Jeff Simms
- Dean Hoffer
- Ed Temple

Cost/Schedule Review Guidance

Project Technical, Cost, and Schedule Baseline Development

To Succeed in Cost / Schedule Arena

Estimate must be

Complete

Scope well understood and defined

Technical goal must be clear

Technology to be used to meet this goal known

Designate how technical systems will be acquired

I.e. buy, have fabricated, self fabricated

Buy parts / fabricate / assemble

How will this be accomplished

Self fabricate / assemble – lab or university(ies)

How will person power requirements be met

And paid for

All tasks defined and specified in a work breakdown structure

WBS dictionary

Documented at lowest level of WBS and include

M&S – materials and services

SWF – salaries, wages, & fringes

Accompanied by schedule showing appropriate durations

Adders – overheads / G&A (general & administrative)

Escalated – shown both with and without escalation with funding

profile based on laboratory/DOE/Federal

budget/appropriation guidance

Cost/Schedule Review Guidance

(Continued)

budget/appropriation guidance

Reviewable

Estimate must “roll-up” from the lowest level to the total and reviewers must be able to drill down from the top to the lowest level

Credible

Basis of estimate must be specified

Catalog prices

Similar work, where cost is documented

Engineering estimates

WAG – wild ass guess

This material forms basis for DOE approving a baseline, for Fermilab/Collaboration Project Management to measure performance and take appropriate corrective actions during execution and for Laboratory Management and DOE to monitor progress.

Cost/Schedule Review Guidance

(Continued)

Baseline Reviews

When preparing a baseline, it can be helpful to be aware of and prepared for the types of things a Director's Technical/Cost/Schedule/Management Review Committee or a DOE Baseline Review Committee will be looking for. The following provides some insight into such reviews. Review Committees are frequently broken up into subgroups which are then assigned to look at specific systems or subprojects within a project.

To be available for reviewers one week prior to the review

- Conceptual &/or Technical Design Reports

- Design Review materials (web address was provided)

 - Materials presented at most recent design review for system

- Detailed schedule for system (to be looked at during breakout sessions)

- Cost Estimate Details for system (will be provided at low levels of the WBS)

 - Including WBS Dictionary and BOE – Basis of Estimate detail sheets

 - (BOE notebooks will be available in breakout rooms)

Tabbed hardcopies of review materials and presentations to be available at the review.
Enough for committee, observers, and a half dozen extras

Cost/Schedule Review Guidance

(Continued)

Technical / Cost / Schedule / Management Review Guidelines
(things reviewers are asked to do)

Technical

Examine Design Review Materials (including TDRs & CDRs) for your system
Assess level at which **scope is understood and defined**
Assess level that **technical aspects of the system are understood, planned, designed, procured/fabricated and/or prototyped**

Cost

Choose >~5 top level WBS elements from your system
Drill down to successively lower levels of the WBS; while at each step
Understanding the **scope** of that element
Understanding the **schedule** for that element
Understanding the **basis of estimate (BOE)** for **both M&S and effort** for that element
Choose a few elements next lowest level of the WBS
And repeat this procedure until you get to the bottom level.
I.e., the lowest level of the WBS

Choose >~5 items in the system for which you have personal experience
Interact with the responsible managers to **determine if**
The Estimate is complete, documented, reviewable, and credible

Cost/Schedule Review Guidance

(Continued)

Check that there is a **detailed BOE for all work elements** in your system

Check whether the **estimate for your system “rolls-up”** from the lowest level WBS element to the total for your system

Does each level of the WBS contain all costs from lower level WBS elements

Assess the **“bottoms up” contingency that the WBS level 3 managers would assign** their components.

Assess the **“top down” contingency analysis assignments by the Project Manager**

Schedule

Is there a detailed schedule, including a critical path, for completing the project? Are milestones appropriate in number and type identified so that the project teams, Fermilab management, and DOE can effectively track and manage progress? Based on past experience, can the proposed schedules be met? Are appropriate schedule contingencies provided? Is there a “resource loaded schedule” and plan for providing the needed resources (M&S and technical support staff and physicists)?

Cost/Schedule Review Guidance

(Continued)

Funding

Have techniques such as forward funding by collaborators and phased funding of large contracts been appropriately incorporated into the planning? Does the anticipated funding profile support the resource requirements?

Management

Is an **appropriate / adequate project organizational structure** in place and **staffed** (or are plans in place) to do the job.

Has the **appropriate project management documentation** been prepared. Is it of a quality adequate for this stage of the project? Are **appropriate / adequate management systems** (Cost and Schedule Control System / Earned Value Reporting, Critical Path Management, Risk Management, etc.) in place or planned for use during project execution?

Action Items

NEW:

- a) Someone (?) to send Kevin the CD-0 documentation mission needs for “alternatives considered” document, needed for CD-1
- b) Dave need to meet with Steve to discuss change control
- c) Gina will send Nancy/Debbie MINOS risk management procedure and probability impact matrix.
- d) Dean to send Nancy/Debbie BTeV risk management document for BTeV (done).
- e) Nancy/Debbie to ask Jim Kilmer what drip ceiling work must happen during shutdown and what can be done while MINOS runs.
- f) Dave to talk to Steve Webster to verify that risk management is to be discussed in PEP, and ask for feedback on current version of PEP.
- g) Dave to reduce cost thresholds for directorate approval by factor of two in PMP.
- h) Debbie/Nancy to formalize configuration management plan.
- i) Next Working Group meeting: November 15, 1:15PM, Ed to bring lunch for all
- j) Following Working Group meeting (Nov. 23) to be rescheduled, as many of us are not available the afternoon before Thanksgiving.

OLD:

- k) Dave/Nancy/Debbie needs to meet with Greg/Steve to discuss change control.
- l) Project should check MSP more closely to clearly get all I&I tasks into WBS 11 **done** and also look to see which of these tasks could be done with FNAL labor just as well as University labor.