



Schedule, Installation Planning

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Summary

This presentation will make passing mention of costs. One slide will be the Gantt chart for WBS 1.1.4 (shown during the 9/11-13 review). WBS 1.1.4 includes the construction and installation of the ends of the decay pipe. That topic will get some mention. There will be one slide of schedule remarks and 5 slides of installation remarks.



Costing

- deemphasized for this review
- covered by 9/11-13 DOE review and Burns & Roe review in mid-October
- summaries, BOEs can be made available
- BOEs based upon a few quotes, plus engineering estimates & physicist estimates



Schedule Remarks

- Major Costs deferred until FY03
- Engineering and Design effort subsides during FY02, has to start up again prior to start of FY03 for oversight of procurement, contract preparation
- Similar oversight in FY03, FY04 for fabrication and installation
- installation effort is a mix of T&M & fixed price—both Davis Bacon--so careful preparation of contracts is necessary



Installation Remarks

- Minos shaft crane is shared between WBS 1.1.4 (decay pipe end caps & absorber) & WBS 2.5 (Near Detector)
 - WBS 2.5 installation plans involve Fermilab technicians
 - WBS 1.1.4 has to be Davis-Bacon
 - best if these usages are kept separate in time
 - WBS 2.5 heavy crane usage is at least 6 months in duration
- WBS 1.2 work in Target Hall sets 14 month scale for critical path installation & commissioning work



Installation remarks

- Installation Issues document (& summary) discuss details (dated 8/2/01)
- Beneficial Occupancy date used is 6/3/03
- Phase I is decay pipe, since it interacts with Target Hall installation (on critical path)
 - need to install some upstream shielding in Absorber Cavern as part of installing the DS end cap on the decay pipe
 - this has to be done early, else US critical path items get delayed
 - vacuum integrity test requires pump installation and connection
 - no detailed planning for various leak scenarios, but US extension, thin window, helium may be substituted for present design—so why plan now?
 - Mini-Jack crane should not be needed during Phase I



Installation Remarks

- Phase I not big enough for fixed price contract, but does involve welding for decay pipe end caps
- Phase II is rest of installation in Absorber Cavern
 - is assumed to start after heavy use of crane by Near Detector is finished
 - Phase IIa is work prior to welding water pipes to modules
 - Phase IIb is welding water pipes to Al modules (need qualified welders) and partial routing of RTD wiring
 - Phase IIc is installation of rest of shielding, labyrinth
 - assumption is that this work is a fixed price contract— including the welding of the water pipe joints



Installation Remarks

- Transport for items awkward in size (e.g. core carrier plate) is a concern. There is a cost figure of \$7500 allocated for a wheeled cart. Contractor may have such equipment? Push with forklift?
- Training time for Mini-Jack crane is not explicitly called out in costing, but presumably is accounted for in costing estimate of 1 hour per block for installation inside the Cavern (3/4 hour per block for staging into Cavern)
 - was a concern during the Director's reviews that led up to the 9/11-13 review



Installation Remarks

There is a large Pert chart showing all the installation steps for WBS 1.1 (on the wall in Nancy Grossman's old office). It is currently on iteration #2 & L3 managers are expected to examine its logic and suggest improvements. It is currently more detailed than the MS Project file used for the 9/11-13 DOE Review (but that will change).