

Conventional Facilities and Siting Global Group (CFS)

Americas Region Update

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Overview

- *CFS Responsibilities for TDP I & II*
- *Current Status*
- *Funding Overview*
- *Considerations for TDR Content*
- *Implications for CFS Effort*
- *Summary*

Technical Design Phase I

- *Identify Cost Drivers from RDR Estimate*
- *Identify Possible Alternative Design Solutions*
- *Analyze Alternatives Using the Value Engineering Process*
- *Select Alternatives and Roll-up into a Revised Baseline Design Solution*

Technical Design Phase II

- *Review Criteria with Area and Technical Systems Based on Revised Baseline Design*
- *Finalize Baseline Design Solution with Adjusted Configuration and Criteria*
- *Develop a Cost Estimate for the Revised Baseline Design Solution*
- *Develop CFS Text for Inclusion into the Technical Design Report*

ILC CFS R&R Plan Milestones

Table 4.1: Functional Requirements and Value Engineering Milestones (stages 1 & 2)

calendar year	2008	2009	2010	2011	2012
Tech. Design Phase I	[Blue bar spanning 2008-2012]				
Tech. Design Phase II	[Blue bar spanning 2010-2012]				
CFS Design work	[Red bars indicating milestones]				
Process Water and HVAC Value Engineering	[Red bar: Q3 2008 - Q1 2009]				
Main linac Tunnel Configuration Alternative Investigation	[Red bar: Q1 2009 - Q3 2009]				
Minimum Machine CFS design	[Red bar: Q3 2009 - Q1 2010]				
Review and Improve Surface Building Facilities Criteria	[Red bar: Q1 2010 - Q3 2010]				
Functional Requirements template publication	[Red bar: Q3 2010 - Q1 2011]				
Functional Requirements complete for main Linac	[Red bar: Q1 2011 - Q3 2011]				
Functional Requirements complete for BDS and IR	[Red bar: Q3 2011 - Q1 2012]				
Functional Requirements complete for Sources, DR and RTML	[Red bar: Q1 2012 - Q3 2012]				
Update RDR Main Linac design	[Red bar: Q3 2012 - Q1 2013]				
Update RDR design for all other areas	[Red bar: Q1 2013 - Q3 2013]				
Develop Project Schedule	[Blue bar: Q3 2013 - Q1 2014]				

FY 09 CFS Status

- ***In General, Work Efforts Curtailed Due to Funding Reductions in FY 08 Were Renewed in FY 09 Even Under the Restrictions of the Initial Continuing Resolution (CR)***
- ***CR Funding Levels Focused Effort Using In-House Salaried and Chargeback Engineering Resources***
- ***Full FY 09 Budget Funding Does Allow Some Funding for Outside A/E Consulting Services in Addition to In-House Engineering Resources***
- ***Influence of ARRA Funds at FNAL will Necessitate Additional Utilization of Outside A/E Services***
- ***The ILC R&R Plan Details the CFS Responsibilities for the Technical Design Phase***

FY 09 CFS Progress to Date

- **Specific CFS Milestones**

- **Complete Water and HVAC VE - Completed FY 09 Q2**
- **Main Linac Tunnel Alternatives**
 - *In-House Efforts Began in Oct 09*
 - *Consultant Contract in Place Apr 09*
 - *Planned Completion FY 09 Q4*
- **Minimum Machine CFS Conceptual Design**
 - *Consultant Contract in Place Apr 09*
 - *3D Collaboration with CERN*
 - *Planned Completion Date FY 09 Q4*
- **Review Surface Facility Criteria**
 - *Least Defined in Terms of Actual Criteria*
 - *Planned Completion Date FY 10 Q3*
- **Conventional Electrical Distribution**
 - *Generally Scales with Power Requirements*
 - *RF Distribution Alternatives Could Influence Distribution Configuration and Costs*
 - *Planned Completion Date FY 10 Q3*

Funding Summary and Comments

- **Current CFS FY 09 Funding - \$1,081 K**
- **Projected CFS FY 10 Funding - \$1,081 K (+10% ?)**
- **Funding Levels Indicated are Considered Adequate for the Tasks Outlined in the Current ILC R&D Plan**
- **The Current Transition to the Use of Outside A/E Consultants will be More Costly (and Time Consuming) Than Using In-House Engineering Effort**
- **The ILC R&D Plan is Reviewed and Updated by the Project Managers Every Six Months**

Considerations for the TDR Content

- *The TDR will “ produce the **technical information** required and agreed by the contracting governments as necessary to proceed to approval of the project”*
- *The RDR Used the Sample Site Approach to Siting Considerations (One Sample Site per Region)*
- *The TDR Will Develop A Baseline Configuration that may not be Completely Suited to One or More of the Sample Sites or Other sites Currently Being Considered*
- *Preliminary Site Characterization may be Required to Identify Adjustments to the Revised Baseline Design Needed to Adapt to a Specific Considered Site*
- *Work is Being Planned for Additional Site Characterization in the Asian and European Regions*

Implications for the CFS Effort

- ***Adjustments to the ILC R&D Plan that Require Additional CFS Effort will Require Additional Funding***
- ***Additional Site Characterization of the Americas Regional Sample Site (or Any Other Americas Site to be Considered) would also Require Additional CFS Funding***
- ***Currently the TDR is Intended to Provide a Revised Baseline Design and Cost Estimate Suitable for Consideration for Project Approval***
- ***Increased Levels of US Participation in the ILC Effort with Respect to Potential Sites Would Have a Dramatic Effect on Required CFS Funding***

Summary Comments

- *The CFS Effort in the Near Term Will Continue to Leverage the Collaborative Efforts On-going at Institutions in Other Regions to Meet the Responsibilities of the Technical Design Phase*
- *Current Funding Levels are Adequate for the Effort Outlined in the Current ILC R&D Plan*
- *The R&D Plan may be Expanded to Examine More Alternatives for the Revised Baseline as the Technical R&D Progresses*
- *The Position of the US with Respect to Preliminary Site Characterization for the Sample Site (or Other Sites) Should be Considered During the Technical Design Phase I*