

Conventional Facilities and Siting Global Group (CFS)

Americas Region Update

V. Kuchler

Initial CFS Goals for FY 08

- *Continue Analysis of Fermilab North/South Alignment Options for Minimum Surface Disruption*
- *Continue Work to Develop, with Consultant Input, a Preliminary CFS Schedule with Defined Milestones from the Present, Through Site Selection to a Construction Start*
- *Continue the Initial Process for the Environmental Assessment and Regulations Concerning a Project of this Magnitude*
- *Begin Formal Value Engineering Process for Various Aspects of the Current Design Beginning with a Review of the Process Water Systems in Conjunction with the US Corps of Engineers*
- *Complete an Formal A/E Selection Process to Facilitate Access to Required Consultant Support Through the EDR Process*

FY 08 CFS Progress to Date

- **Consultant Report was Completed and Received in January 08 Which Provided Input on ILC Project Organization and Scheduling Through the Current Design Phases to the Start of Construction**
- **A Formal Value Engineering Workshop was Conducted in December 07 in Conjunction with Corps of Engineers Representatives, Outside Contractors and FNAL, SLAC and KEK Participation**
- **Only Preliminary Work was Completed on Tunnel Configuration Alternatives**
- **A/E Selection Process Managed to Establish a Source Selection Board but it was Dissolved in December 07**
- **No Work was Accomplished Concerning the initial Process for Environmental Assessment**

ILC CFS Global Opportunities

- ***Several Institutes Are Working on ILC or Similar Projects that Complement the ILC CFS Effort***
- ***While Technical Components of Other Machine Design May Vary from ILC Design, Several Aspects of CFS Criteria are Very Similar***
- ***Example Include Underground Construction, Egress and Life Safety, Water Cooling Systems, Electrical Distribution, etc***
- ***FNAL - Project X, Neutrino Program***
- ***CERN - CLIC***
- ***DESY - XFEL***
- ***KEK - J-PARC***
- ***JINR - Dubna Site***

Proposed CFS Plan for Remainder of FY 08

- **Continue GDE Participation**
 - *Minimum Conference Participation*
 - *General Coordination of Global CFS Efforts*
- **Continue Process Cooling Value Engineering Analysis**
 - *KEK May Have Available Funding to Support This Effort Beginning Approximately April, 2008*
 - *CERN May Also Review as a Part of the CLIC Process Cooling Water Design Effort*
 - *Minimal FESS Engineering Support is Required*
- **Continue Interaction Region Design Primarily Through CERN**
- **Alternate Tunnel Configurations**
 - *Originally Started in FY 08 w/ CFS ILC Funds But Now Stopped*
 - *CLIC Single Tunnel Solution will be Reviewed*
 - *XFEL Single Tunnel Solution will Be Reviewed*
 - *Could be Continued in Conjunction with JINR Support*

GDE Direction to the CFS Global Group

- ***Examine CFS RDR Requirements***
- ***Examine CFS Support Systems (Primarily Process Cooling Water), Identify Cost Drivers and Continue Value Engineering for Cost Reduction Opportunities***
- ***Develop Models for Alternate Tunnel Configurations and Siting Conditions (Shallow Sites and Single Tunnel Solutions)***
- ***Participate in the Development of Possible Alternative Machine Layouts Which May Lead to Cost Reduction***
- ***Develop Siting Strategies Toward an Optimized Design Solution***

Schematic Path to an Optimized Design Solution

Value Engineering and Technical Criteria Review



Alternate Configurations Identified



Alternatives Ranked by Parameters (Cost)



*Qualifications and/or Required Criteria
Adjustments for Optimum Alternatives Reviewed*



*Selected non-Site Specific Alternatives Combined
into an Optimized Design Solution*

Proposed CFS Plan for FY 09

- **CFS Funding Level Request \$981K**
 - 1 FTE In-House CFS ILC (WBS 1.7.1.1 \$242K + \$87K)
 - 2.5 FTE In-House CFS Chargeback Support (WBS 1.7.1.1 \$400K + \$64K)
 - CFS Outside A&E Support (WBS 1.7.1.2 \$163K + \$26K)
- **Funding at This Level Will Provide:**
 - Continued General Coordination of Global CFS Efforts
 - Completion of the Process Cooling Value Engineering Efforts
(Milestone for November GDE Meeting)
 - Continuation of the Alternative Tunnel Review for the Main Linac
(Milestone for Spring GDE/AAP Review Meeting)
 - CFS Value Engineering Process (Initial Review)
 - **Underground Space Utilization**
 - **Electrical System Design Review**
 - **Development of Functional Requirements (TDP-1)**

Summary Comments

- *The CFS Effort in the Near Term Will Continue to Leverage the Collaborative Efforts On-going at Other Institutions to Maintain Momentum into the Technical Design Phase of the ILC Project*
- *CFS Represents ~33% of the Project Cost and ~3% of the R&D Budget*
- *We Appreciate the Difficulty of the Challenges Ahead During TDP I and TDP II Through 2012*
- *We will Continue to Focus on Value Engineering, Alternative Investigation and Cost Reduction Analysis in Order to Provide Valid Data for Project Management Decision Making Efforts*